Submission on the Draft Kildare County Council Development Plan

Lands at

Naas Enterprise Park, Co. Kildare

On behalf of

PALM LOGISTICS

23 May 2022

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1 Executive Summary

- This submission puts forward, in some detail, the merits of a rezoning of agriculturally zoned lands to **NE 1: Industry/Warehousing.** Our client, Palm Logistics, is specifically requesting that Kildare County Council consider this proposal in some detail.
- There has been a structural shift in logistics, as a result of ecommerce growth. Covid and Brexit combined, have resulted in unprecedented levels of demand for large modern logistics, in well located logistics parks (such as Naas Enterprise Park).

- The vacancy rate currently is only 1% with no vacant space available from Junction 9 (Naas North) to Junction 12 (Kildare Town), against a backdrop of strong occupier and employment demand.

- There is only 151.2 zoned and serviced land available in this Corridor which will be absorbed in the next 3 years. (Source CBRE). This is compounded by the de-zoning of 65 hectares of commercial land at Newhall.

- There are no zoned sites in Naas Enterprise Centre that can facilitate large buildings in excess of 25,000 sq.m which are required by existing tenants (DSV) and future occupiers.

- As part of the rezoning strategy, Palm Logistics intend to facilitate the **Kildare Underage District League moving to more suitable and modern facilities.**

- This report and supporting documentation conclude that this zoning of lands adjacent to the subject site provides a logical expansion of Naas Enterprise Park.

- Transport Insights have concluded that the proposed rezoning will not give rise to a material impact on the performance of the nearby M7 mainline strategic road network.

- Additional due diligence has been undertaken in respect of Ecology and Flood Risk Assessment and have concluded that there are no undue impacts created by the rezoning of the proposed site.

- Palm Logistics intend to significantly invest and develop state of the art facilities with a strong focus on sustainability attracting major employment to the area.

- We would invite the Council to review this submission and the details contained within.

We conclude that re-zoning this land is in accordance with proper planning and sustainable development, makes efficient use of serviced lands, and is a logical, and sequential way to deal with a conclusive supply/ demand issue.

We request the Planning Authority to rezone the identified subject site, identified later in this report, as requested.

2 Introduction

We, Brock McClure Planning Consultants of 63 York Road, Dún Laoghaire, Co. Dublin have been instructed by our client, **Palm Logistics, 38 Main Street, Swords, Co. Dublin, K67E0A2, Ireland** c/o Green Urban Logistics Devco Limited to make this submission for consideration during the review and finalisation of the Draft County Development Plan.

The site which is the subject of this submission, is located at Naas Enterprise Park, Naas, Co. Kildare.

This submission puts forward, in some detail, the merits of a rezoning of draft agriculturally zoned lands to **NE 1: Industry/Warehousing.**

3 Palm Logistics Background & Confirmation of Land Ownership

Palm Logistics is an experienced logistics developer across Europe developing over 5 million sq.ft of sustainable market leading logistics attracting large corporate tenants in locations such as Madrid, Copenhagen and Greenogue Logistics Park.

Palm Logistics have identified Naas Enterprise Park as a key national logistics and distribution hub with strong fundamentals for future growth. The park currently employs over 2,000 people with opportunity to more than double this through investment and expansion.

Palm has a proven pan-European track record in transforming logistics parks into world class destinations, with sustainability, employment, and technology as key drivers.

Palm Logistics have close established relationships with major international logistics players and intend to help bring some of them to County Kildare.

Palm Logistics have committed to invest €100m in the future sustainable development of Naas Enterprise Park.

Palm Logistics have confirmed that it is their intention to;

- Fully develop out the park and improve facilities throughout;
- Improve and enhance the general environment, between buildings and facilities, for the benefit of all the park's users;
- Improve wayfinding and orientation within the park including directional signage;
- Improve the park's identity, local, regionally, and nationally;
- Enhance the park's sustainability credentials in line with international best practice

We can confirm that our client owns the extent of the landholding identified in Figure 1 below.

They intend to invest in a major upgrade of facilities and amenities in the park, in an initiative designed to support and sustain long term economic growth and jobs creation in Kildare.

Figure 1 – Subject Site (Red)

4 Subject Site

The subject site is located south-west of Naas town and North-east of Newbridge along the M7 corridor. The subject site is also located within relative proximity to the Dublin-Cork railway line which services Sallins & Naas as well as Newbridge. Proximity to the M7 provides a direct link to Dublin, Portlaoise, Limerick. The M7 also links with the M8 and M9 which connect Cork, Waterford Carlow, and Kilkenny. There are multiple retail and enterprise parks located along the M7 corridor including Newhall Retail Park, M7 Retail Park

Figure 2 – Site Context

Naas Enterprise Park currently comprises of over 40.47 ha (100 acres), 100 occupiers and over 139,350 sqm (1.5 million sq. ft) of industrial and office accommodation. This enterprise park is home to many occupiers and employers that include Domino's Pizza, DSV, NCT, National Council for the Blind, HSE and Conlan BMW.

Naas Enterprise Park has recently experienced improved connectivity to the M7 through road enhancements. This is mentioned in Section 3.3 below as well as in supporting documentation from Transport Insights.

The subject site is an ideal location for facilitating the increased demand of modern logistics. The vacancy rate in the park is currently 1% and the recent upgrade and widening of the N7 Motorway has further improved the connectivity and attraction of Naas Enterprise Park as a location. Palm Logistics intend to invest significantly into the location to further improve the amenity, safety and sustainability of the Park as per the schemes they have developed across Europe.

Naas Enterprise currently has 8 zoned sites in the ownership which will be built out by Palm Logistics as part of their initial investment in the scheme. However, there are no zoned sites that can facilitate large buildings in excess of 25,000 sq.m which are required by existing tenants (DSV) and additional prospective large scale operators who have expressed a desire to located here. Furthermore, there is a present and real risk that some existing tenants, notably DSV, will have to re-locate if their growth cannot be accommodated in the park.

It is the intention of Palm Logistics to invest up to €100m in the park to improve and upgrade the Park to make it the market leading logistics park in Ireland. As per CBRE and Darac O Neill's commercial report there is insufficient zoned land in the Park to address the increased logistics demand from existing and new tenants ; particularly for large warehouse units which will bring significant job creation to the county. This can only be addressed through the re-zoning of additional land.

5 Kildare County Council Draft Development Plan 2022-2028

5.1 Issues Paper

A submission was previously made, in respect of this site, on the Issues Paper produced by Kildare County Council at the commencement of the Development Plan review process.

We have reviewed the Chief Executives's initial report in some detail and welcome the following coments following the directions given by the members of the Planning Authority:

5.1.1 Economic Development & Enterprise – Strategic Planning

Direction 39:

That the CDP delivers a strategic plan for the area between Newbridge and Naas encompassing the existing village plan for Ladytown (Ladytown Business Park) but expanding to examine economic and residential opportunities between both towns with the goal of creating a corridor of high value employment.

Chief Executive's Response:

"The two elements to this Direction namely expanding both economic and residential opportunities at Ladytown, between Naas and Newbridge are noted and agreed.

As part of the review of the Kildare CDP an analysis of the existing economic base throughout the county will be undertaken in collaboration with the LEO office, Enterprise Ireland and the IDA, particularly in relation to the extent of existing employment land and proposed additional employment land that must be provided for economic purposes to the end of the Plan period to 2029 and beyond. When a comprehensive analysis of the county has been undertaken, appropriate locations for suitable levels of economic expansion will be identified that have regard to the NPF and RSES and that also take into account policies relating to TII and the NTA.

BMC Comment:

We welcome the submission by the CEO that "*the extent of existing employment land and proposed additional employment land that must be provided for economic purposes to the end of the Plan period to 2029 and beyond*" .

This submission will confirm that the most appropriate location for the provision of additional lands zoned for 'economic purposes' is at this location on our client's landholding.

Palm Logistics are committed to invest in the regeneration, development and upgrade of facilities and amenities in the park to retain and attract existing and future occupiers. It is our submission that growing demand from key existing occupiers can only be met through the rezoning of additional lands at this specific location.

5.1.2 Economic Development & Enterprise – General Zoning & Employment

Direction 41:

That the Council facilitates the expansion of existing and new enterprise opportunities for SME's in urban and rural areas where appropriate and required and that the Council supports and expands the sequential zoning of commercial land in our towns and villages to increase the percentage of people living and working in County Kildare.

Chief Executive's Response:

"The Draft Plan will acknowledge that the development of rural enterprise and employment opportunities will be vital to sustaining the rural economy of County Kildare. However, the Draft Plan must balance this with the requirement to promote enterprise development at locations which would not undermine the attractiveness or viability of the County's towns and villages and/or serviced areas.

The Draft Plan will include an objective to facilitate the development of SMEs at appropriate locations in urban/serviced rural areas in accordance with Government Policy "Our Rural Future; Rural Development Policy 2021-2025" (2021) and other relevant government agencies including the NTA and TII."

Direction 42:

That the plan includes policies that promote the use of enterprise and industrial zoning lands for maximum employment opportunity.

Chief Executive's Response:

"The CDP will include a range of policies and objectives relating to the promotion of enterprise and employment opportunities throughout Kildare as well as through the zoning objectives relating to our small towns, villages and rural settlements. Furthermore, locations for enterprise and employment are and will continue to be specifically identified in the various Local Area Plans."

BMC Comment:

We welcome the fact that the CEO acknowledges that "employment opportunities will be vital to sustaining the economy of County Kildare" while also indicating that these opportunities should be developed at locations "which would not undermine the attractiveness or viability of the County's towns."

It is our submission that sites such as this at Naas Enterprise Park which are separated from both Naas and Newbridge are ideal locations to facilitate this expansion of employment opportunities. As stated elsewhere in the Draft Plan, it is also important to keep a clear division between both settlements. This can be maintained despite the rezoning of additional lands at NEP.

5.2 Draft Development Plan Policy

The Kildare County Council Draft Development Plan 2023-2029 includes important planning policy regarding job creation which development at Naas Enterprise Park will support and create. These relevant policies can be seen below.

Resilient Economy and Job Creation

RE P1	Ensure that future economic and enterprise development in Kildare should be largely distributed in accordance with the county's economic hierarchy having regard to each individual areas (a) identified role within the hierarchy, (b) existing size, (c) existing function (d) capacity for sustainable growth (i.e. growth without detriment to its surroundings, its built or natural assets and/or its character) and (e) available infrastructure capacity. There is, however, a positive presumption in terms of employment creation and therefore it is Council policy to examine such proposals within other locations on a case-by-case basis for example employment related development in a location clearly linked to a rural resource activity.

Site Specific Response:
The proposal for Naas Enterprise Park supports policy REP1 as the zoning of additional lands for Industry & Warehousing would promote economic development along the M7 corridor. With increased capacity, thorough the rezoning of additional lands, Naas Enterprise Park has the capacity to facilitate sustainable growth and increase employment.

RE P2	Support and facilitate the economic development of the county in accordance with the Kildare 2025 (Economic Development Strategy); across a range of sectors. There will be a general presumption against development that would prejudice the achievement of the Economic Development Strategy.

The Kildare Economic Development Strategy focusses on 8 areas of the economy.

- Indigenous Industry/SMEs
- Foreign Direct Investment (FDI)
- Knowledge Economy
- Equine Industry
- Agri Food Sector
- Sustainable Tourism, Hospitality and Leisure
- Retail
- Climate Action & Green Economy

Site Specific Response:
The proposal for Naas Enterprise Park supports and aligns with REP2 wherein the zoning of additional lands for Industry & Warehousing would allow investment to be made into multiple of these recognised economic areas including Foreign Direct Investment.

RE P3	Ensure a co-ordinated approach to policy, objectives and actions as contained within the County Development Plan, Kildare 2025 (Economic Development Strategy) and the Local Economic and Community Plan through continued engagement with the relevant stakeholders including (but not limited to) Kildare Local Community Development Committee, and Municipal Districts.

Site Specific Response:

The proposal for Naas Enterprise Park supports REP3 as the proposed expansion is in keeping with policy and objectives within the Kildare Development Plan and the Kildare Economic Development Strategy.

RE P4	Support urban growth and regeneration through the promotion of good placemaking to attract employees and employers and to provide a competitive advantage to the County.

Site Specific Response:

The proposal for Naas Enterprise Park supports REP4 as Palm Logistics plan to improve facilities throughout the park as well as improve the Park's identity, locally, regionally, and nationally. This will attract both employees and employers to the park.

RE P12	Ensure that economic and enterprise related development is provided in a manner which facilitates a reduction in greenhouse gas emissions and accelerates the transition towards a sustainable, low carbon and circular economy. The following measures shall be supported: • An increase in employment densities within walkable distances of communities and on public transport routes
	• Promotion of walking and cycling and use of public transport through increased permeability and mobility management measures within and outside employment areas • The sourcing of power from district heating and renewables including wind and solar. Additional native tree planting and landscaping on existing and proposed enterprise zones and development sites to aid with carbon sequestration, contributing to the green infrastructure network of the County and promoting quality placemaking.

Site Specific Response:

The proposal for Naas Enterprise Park supports REP12 as this proposal would include the development of the public realm within the enterprise park which would see a substantial improvement to pedestrian facilities and creation of sustainable local communities.

Palm Logistics also aim to enhance the Park's sustainability credentials in line with international best practice. Quality placemaking will also be incorporated into any future scheme by Palm Logistics supported by BKD Architects.

5.3 Draft Development Plan Zoning

As stated above, our client are seeking a rezoning of a quantum of lands adjacent to the existing zonings and land uses at Naas Enterprise Park. This would represent a logical extension to the current Park facilitites, infrastructure and services.

The current Plan is shown below:

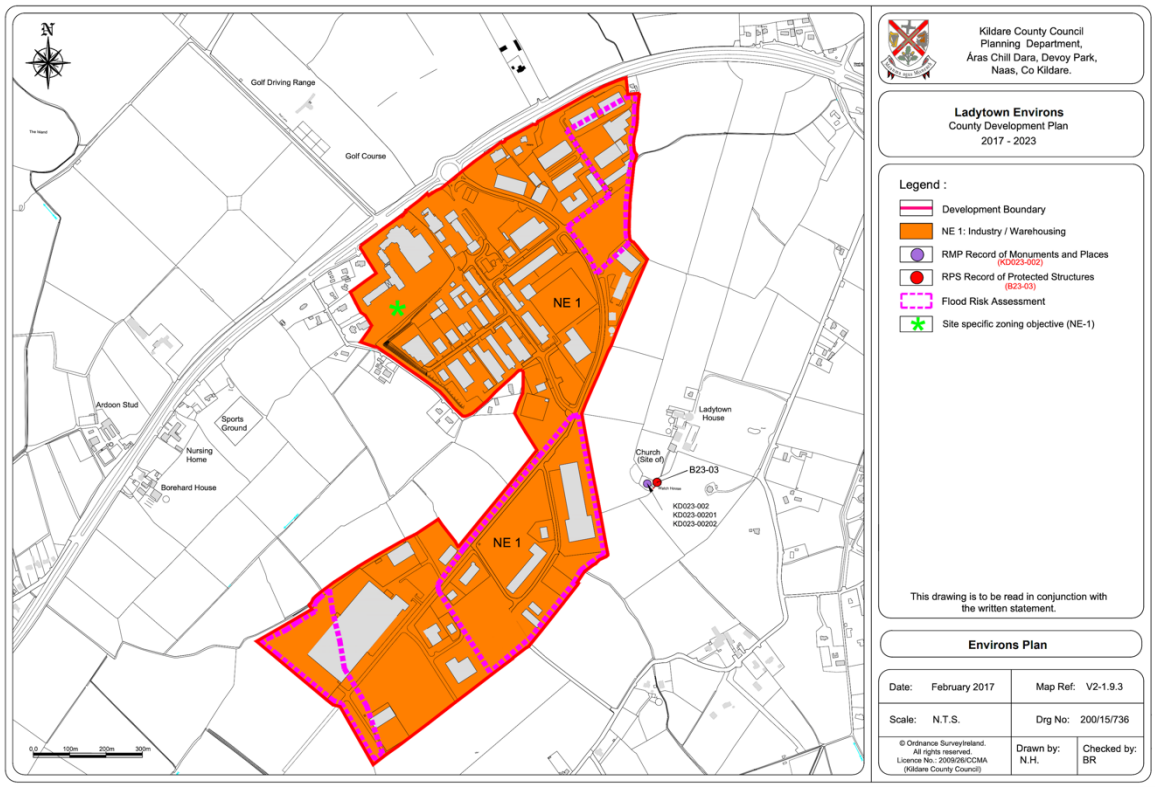


Figure 3 - Ladytown Environs Plan 2017-2023

The Draft Plan is now shown below, and it is clear that the status largely remains the same.

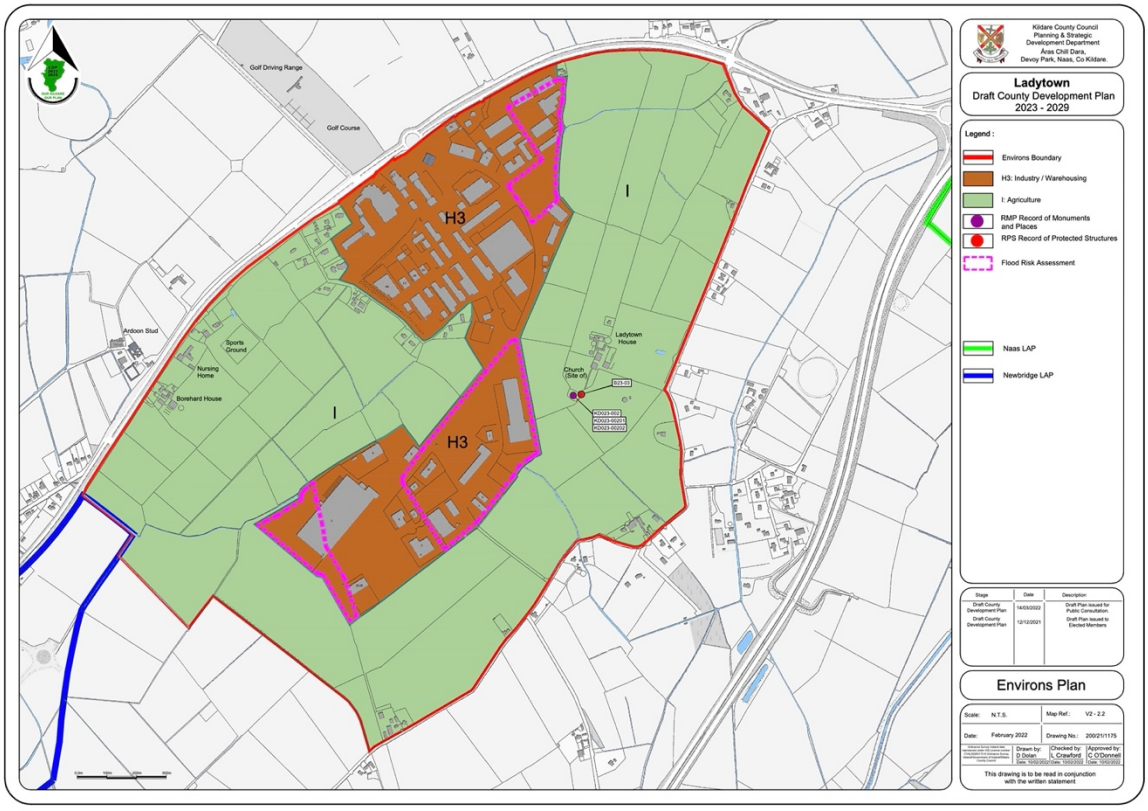


Figure 4 - Current Ladytown Environs Draft Plan 2023-2029

NE 1: Industry/Warehousing

The purpose of this zone is to provide sites for industrial, and in particular warehousing uses, at locations which are outside the built-up area of Naas, and which are, or could be made available with appropriate road improvements, readily accessible to the national road network.

Palm Logistics is seeking a rezoning of a portion of these lands to allow them fulfil the demand requirements and ensuring that any new development activity occurs in a logical and sequential fashion.

6 De-zoning Industry, Warehousing and Employment Lands in the Naas Local Area Plan 2021-2027

The Current Naas Local Area Plan 2021-2027 indicates sites zoned for Industry & Warehousing use within the map below.

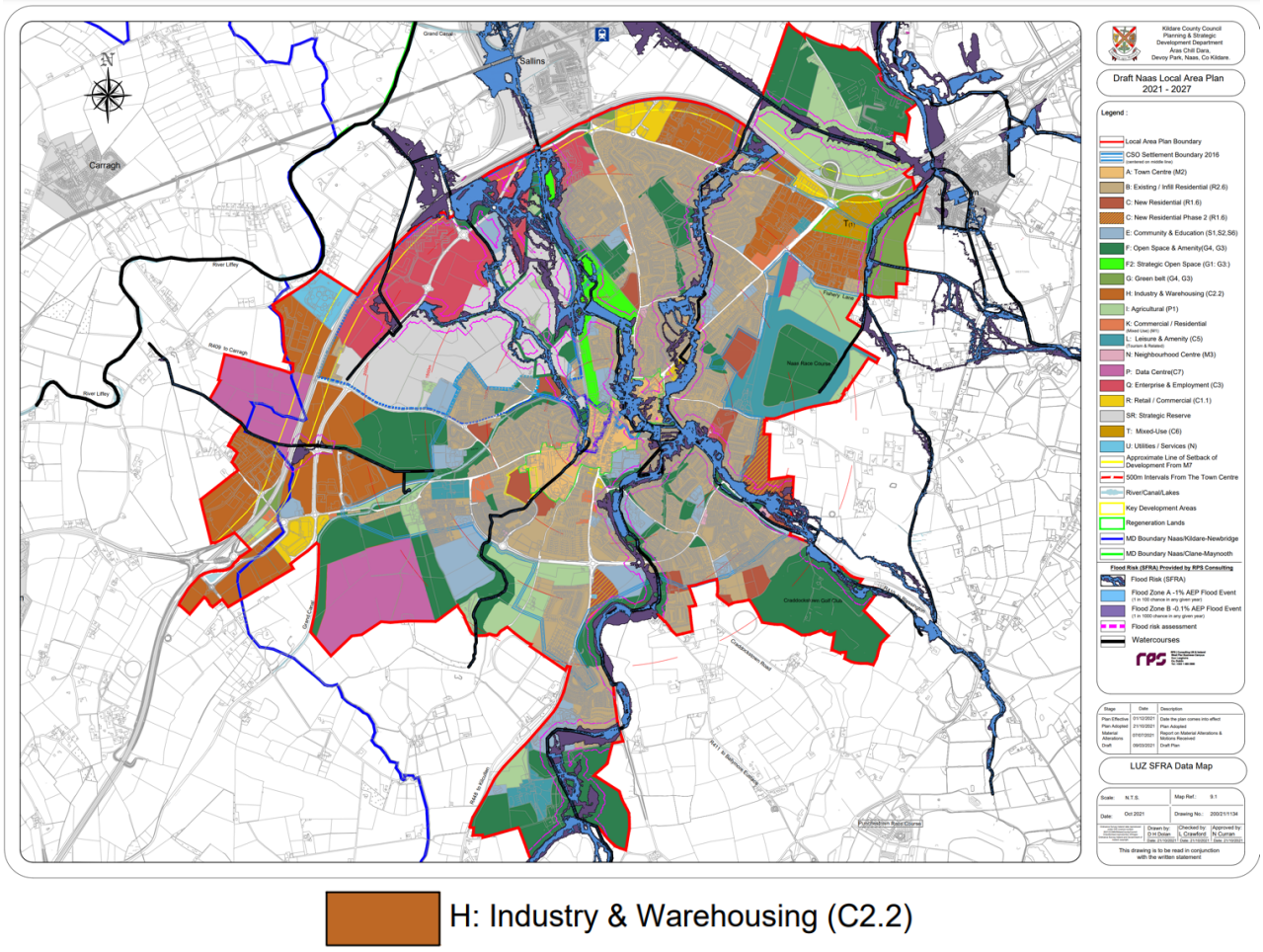


Figure 5 - Land Use Zoning – Naas Local Area Plan 2021-2027

These areas, which have been zoned for Industry & Warehousing and Employment use, are primarily located to the north-west of the town. The quantum of sites which are zoned accordingly significantly reduced during the course of the preparation of the final LAP with a large site dezoned in the south west of the town. The zoning of the Naas Local Area Plan 2019-2023 can be seen below.

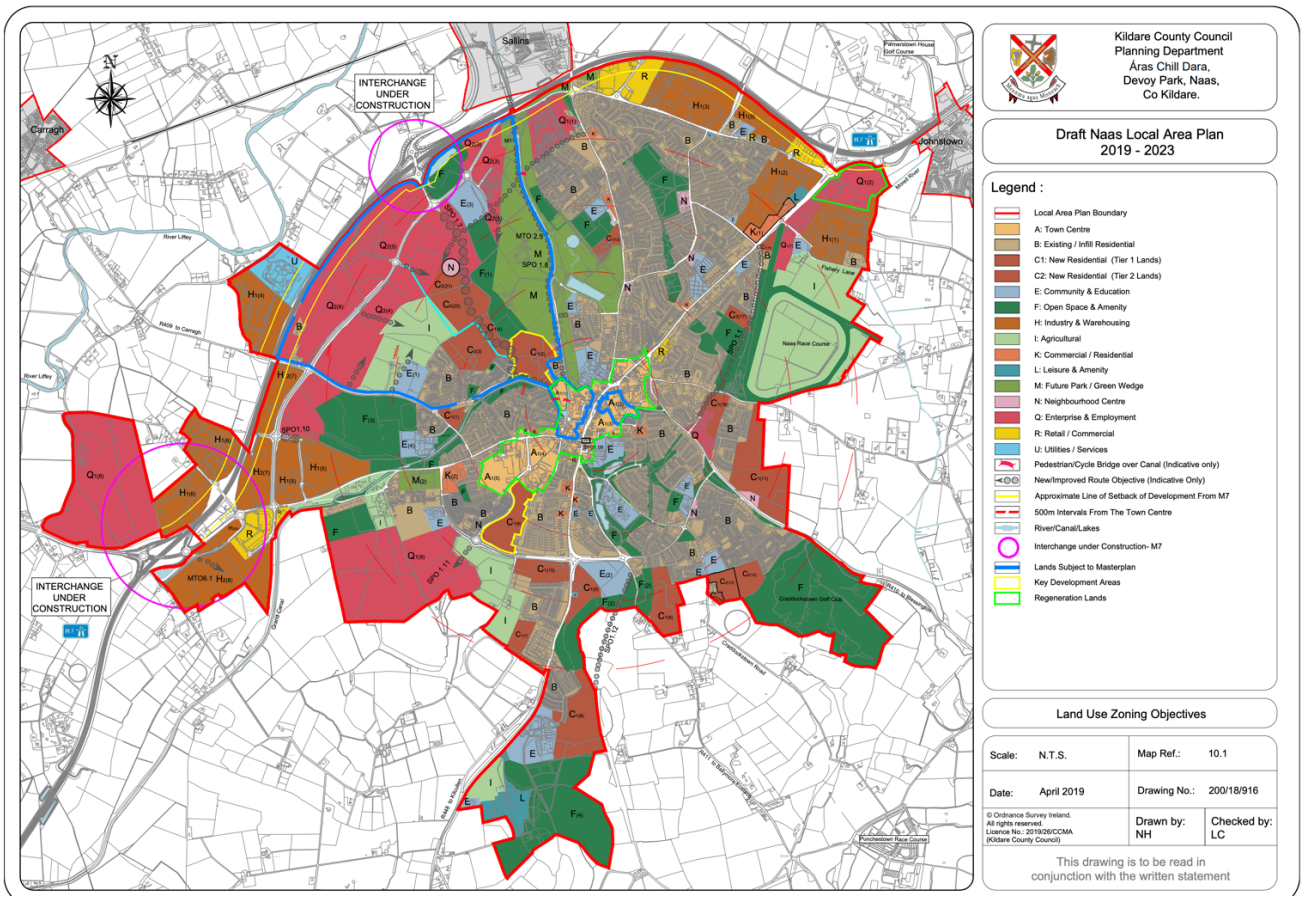


Figure 6 - Land Use Zoning – Naas Local Area Plan 2019-2023 (Not adopted)

As can be seen in the land use zoning map for the Naas Local Area Plan 2021-2027 there was a significant portion of land de-zoned . The change in zoning for Industry and Warehousing can be seen in the images below. The land which has been zoned for Industry & Warehousing has dropped from approx. 194.31 Ha in the Naas LAP 2019-2023 to approx. 191.86 Ha in the Naas LAP 2021-2027.

A large site at the west of Naas has also been identified as having been de-zoned. This site was initially zoned for Enterprise & Employment usage.

Q: Enterprise & Employment

This Enterprise & Employment site are is 62.09Ha which when included with land de-zoned from Industry & Warehousing zoning equates to a loss of **64.54Ha** zoned land.

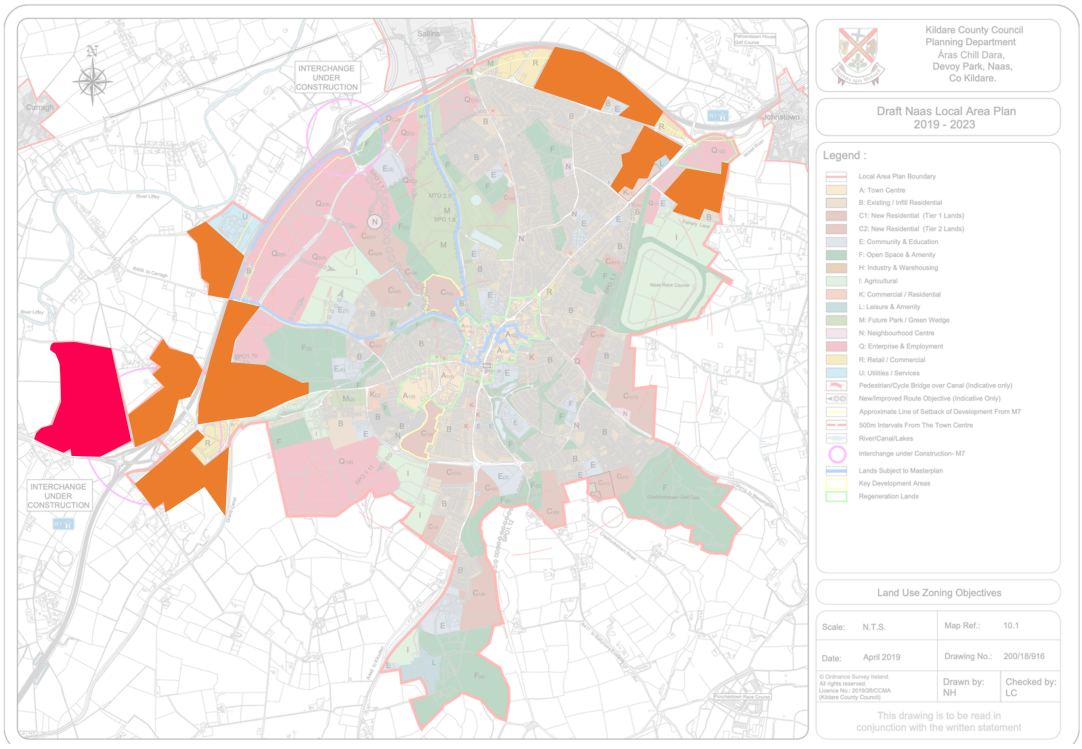


Figure 7 - Display of Land Zoned for Industry & Warehousing – Naas Local Area Plan 2019-2023 (Not adopted)

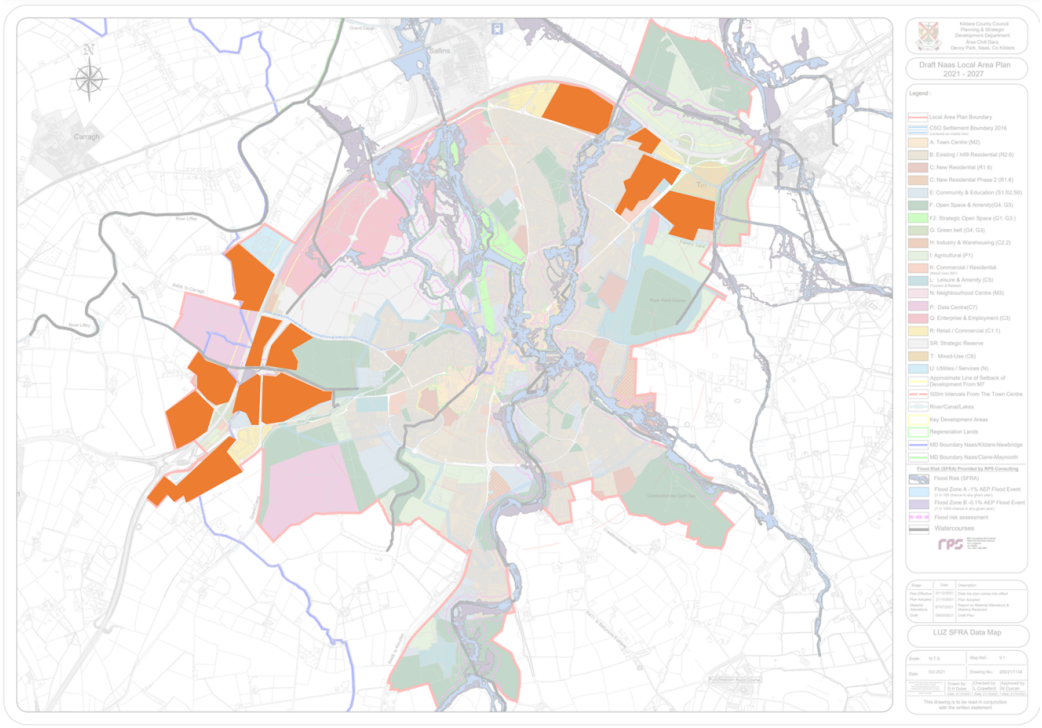


Figure 8 - Display of Land Zoned for Industry & Warehousing – Naas Local Area Plan 2021-2027

There is land now available, in Naas Enterprise Park, which can address the deficit this de-zoning created. We would ask the Council to examine this submission accordingly.

7 Newbridge Local Area Plan 2013-2019 (Extended until September 2021)

The most recent Newbridge Local Area Plan is dated 2013-2019. However, this was extended until December 2021. A more recent Local Area Plan for the town of Newbridge has not yet been prepared.

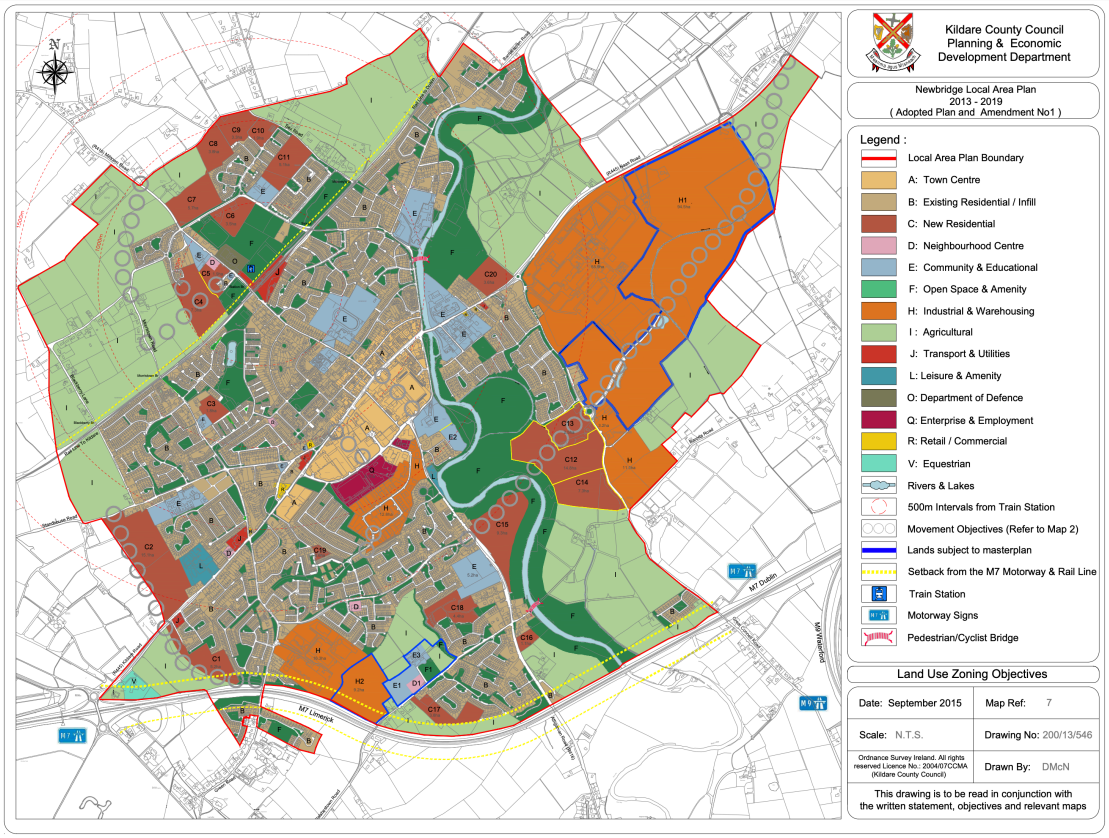


Figure 9 – Newbridge Local Area Plan 2013-2019 Zoning

The Newbridge Local Area Plan 2013-2019 does not encompass the subject site and/or lands adjacent to Naas Enterprise Park proposed for re-zoning. This can be seen in the figure below.

Figure 11 – Location of Subject Site in Relation to Newbridge LAP 2013-2019

The appropriate mechanism for the consideration of additional zoned lands at Naas Enterprise Park is through the review of the current Development Plan, wherein the Ladytown Environs Plan sits.

Our client does not control any lands adjacent to the boundary of the Newbridge LAP and it is considered appropriate to keep the development boundary of each site separate, as per the Policy Guidance contained in the Draft Plan.

8 Rezoning Request

We are now formally seeking a rezoning of a portion of our client's site which will represent a logical extension to their existing working landholding.

We are formally asking Kildare County Council to rezone these lands from so called 'white lands' under the current Plan to **H3: Industry/Warehousing.**

Based on the content of the Draft Plan this would represent a rezoning from Agricultural zoned land to Industry Warehousing.

The extent of the rezoning request can be seen below and is outlined using a shaded brown annotation and represents 23.16 Ha of land, which is within the control of our client. It is also appended to the rear of our report.

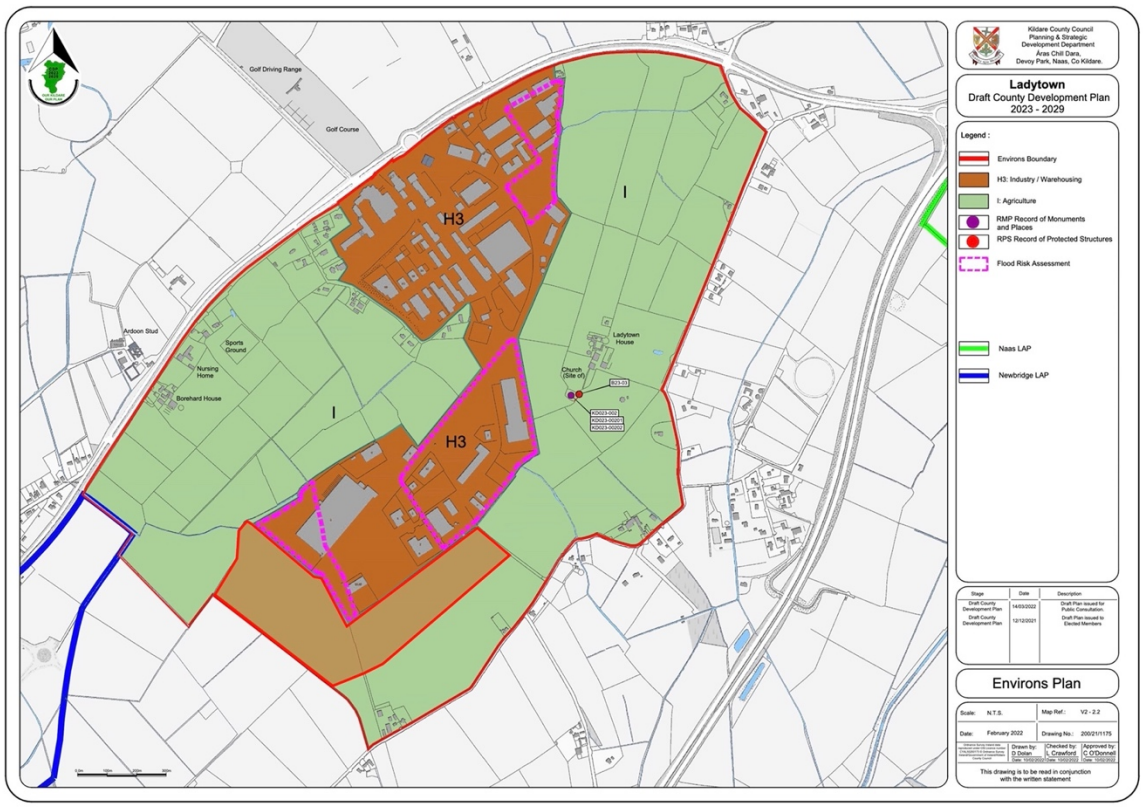


Figure 12 - Proposed Ladytown Environs Zoning

9 Rationale and Support for Rezoning

Palm engaged a wide range of professional consultants to provide preliminary baseline and desktop analysis on the subject site to understand the supply and demand requirements in existance at this location and to assess whether, in principle, the lands were capable of accomodation increased enterprise and industrial activity.

As part of this due diligence exercise the following consultants were appointed and will form part of the NEP team moving forward:

- **CBRE – Commercial and Supply Demand Analysis**
- **Darac O Neill - Commercial and Supply Demand Analysis**
- **BKD Architects - Architectural Reports and Drawings**
- **Transport Insights - Traffic and Transport Assessment**
- **JBA Consulting – Flood Risk Analysis**
- **Enviroguide – Environmental Analysis**

9.1 Sequential Analysis – BMC, CBRE, O' Neill Chartered Surveyors

Detailed sequential analysis was carried out along the M7 and N7 as this is considered to represent where demand exists. The full details of this sequential analysis can be found in the appendix to this report and the submission prepared by CBRE.

Detailed sequential analysis was carried out of suitable logistics serviced land. Please see finding overleaf but the **there is only 151.2 acres of zoned and serviced land available in this corridor which will be absorbed at most in the next 3 years resulting in very limited availability of serviced logistics land available.(Source CBRE / Darac O'Neill**)

The subject site is located in Area 3 of this sequential study. This can be seen in the figures below.

Figure 13 - Sequential Testing Areas 1-5

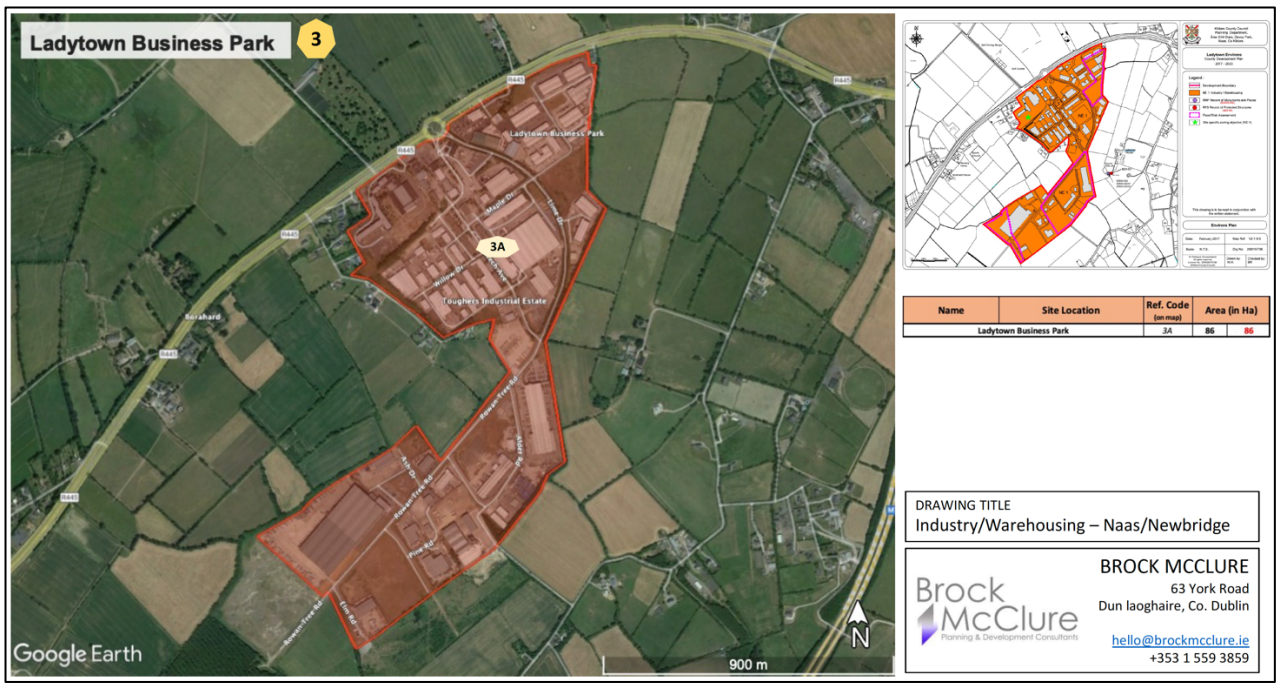


Figure 14 - Sequential Testing Area 3

Sequential Testing Findings

This Sequential Testing has been key in identifying sites which are zoned for Industry & Warehousing and Employment along the M7 corridor. This analysis concluded that there is insufficient zoned lands along this strategic transport corridor.

Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Kildare Town	Whitesland West Business Park (H1)	1A	13.9	
	Whitesland West Business Park (H2)	1B	33.6	
	Greyabbey -1	1C	27.6	
	Greyabbey -2	1D	3	
	Curraghfarm -1	1E	4.12	
	Curraghfarm -2	1F	0.77	
	Kildare Business Park	1G	7.25	
				90.24
Newbridge	Little Connell - H	2A	55.9	
	Little Connell (H1 : Masterplan)	2B	94.5	
	Great Connell -1	2C	3.2	
	Great Connell -2	2D	11.8	
	Newbridge Industrial Estate	2E	12.8	
	Crotanstown	2F	16.3	
	IDA Business Park (H2 : Masterplan)	2G	9.2	
				203.7
Ladytown Business Park		3A	86	86
Naas	Naas Industrial Estate	4A	20	
	Maudlins	4B	17.7	
	Monread Road, Maudlins	4C	4.75	
	Monread Industrial Estate	4D	36.6	
	Millenium Business Park	4E	0.83	
	Oberstown Industrial Park -1	4F	17.4	
	Oberstown Industrial Park -2	4G	2.56	
	Milennium Park -1	4H	11.9	
	Milennium Park -2	4I	9.2	
	Jigginstown	4J	9.78	
	Southern Link Business Park	4K	26.1	
	M7 Business Park & Motor Park	4L	31.3	
	Newhall Retail Park - 1	4M	25.7	
	Newhall Retail Park -2	4N	4.61	
				218.43
Kill	Embassy Office park	5A	2.82	
	Hartwell Lower	5B	23.8	
				26.62
TOTAL		Approx.		624.99

9.2 Supply & Demand Analysis – CBRE & O'Neill, Chartered Surveyors

CBRE have undertaken a detailed study on both the macro and micro influnces on the subject site and demand supply analysis of the County and region as a whole. Extract and key findings from their report are summarised below and we refer the reader to the full report in the Appendices.

- CBRE have described how a structural shift has fuelled demand for modern industrial & logistics premises, particularly in the Greater Dublin Area and along major road arteries such as the N7 which is the primary road network connecting the cities of Dublin and Cork.

- The vacancy rate within the Top 35 industrial schemes in the Dublin region is currently approximately 2.83% while the vacancy rate along the M7 Corridor from Junction 9 (Naas North) to Junction 12 (Kildare Town) is currently 1% with virtually no vacant stock available.

- If requirements are to be fulfilled and Kildare County Council to fully benefit from the pent-up demand for both land and facilities in the Naas/Newbridge region, it is clear that additional land will need to be rezoned to facilitate this.

  CBRE have recommended that the rezoning of circa 60 acres of unzoned land at Naas Enterprise Park for NE1 – Industry & Warehousing use is strongly recommended on the basis that this land is:
  - immediately adjacent to the already established business park which houses several occupiers with aspirations to grow their footprint within the scheme but who may be forced to relocate elsewhere if sufficient zoned and serviced land is not available;
  - easily accessible using the existing road infrastructure;
  - greenfield land which can be developed quite quickly once zoned and planning has been secured;
  - not in close proximity to existing residential development and
  - fully serviced

  CBRE have researched and found that several of the existing occupiers within the Naas Enterprise Park scheme aspire to expand their operations over the next five years and would clearly have a preference to remain within the Park if possible.

CBRE have comprehensively concluded that "*Kildare County Council need to be mindful of this structural shift and zone sufficient lands now to enable their local authority areas to be in a position to capitalise on the inevitable opportunity and job creation potential.*"

9.3 Traffic & Transport

Transport Insights have provided a transport submission relating to this site at Naas Enterprise Park. This document discusses topics such as road infrastructure, pedestrian access and traffic demand and is appended to the rear of this report. We direct the Planning Authority to their complete submission and provide only a brief summary here.

This Traffic Impact Assessment has found that some road links are projected to experience a percentage increase in AADT of more than 5% (e.g. NEP access arm). A detailed junction assessment will be undertaken with any future planning application for future zoned lands to assess the impact at the R445/ NEP Access Roundabout.

An assessment of the potential impact of development traffic was also undertaken for the recently upgraded Junction 10 of the M7 motorway. This assessment indicated projected percentage increases in AADT of 1.3% to 7.9% in the YoO+7.

Transport Insights have concluded that the proposed rezoning will not give rise to a material impact on the performance of the nearby M7 mainline strategic road network.

9.4 Ecological Analysis

Enviroguide Consulting have prepared an Ecological Impact Assessment Report relating to the site at Naas Enterprise Park. This document discusses topics such as potential impacts of the proposed re-zoning and mitigation & enhancement measures.

The Proposed Re-zoning of Lands is expected to result in applications for permissions of developments typical of the Industry/Warehousing zoning on the already developed lands adjacent to the Site. Potential sources of impacts were therefore identified based on typical Industry/Warehousing developments in the area as follows and it is concluded by Enviroguide that standards construction and operational mitigation measures can be implemented at this location.

Whilst the findings of this report are conclusive - Palm Logistics have instructed Enviroguide to continue their surveys through to September , therefore their report still presents in 'Draft' format and is submitted here as same.

Palm Logistics confirm that all appropriate due dilligence and recommended mitigation measures will be implemented, as a matter of course, in the event that future planning applications are brought forward on newly zoned lands.

9.5 Flood Risk Analysis

JBA Consultants have provided a Flooding & Surface Water Management note which accompanies this submission.

JBA have recognised that the draft Kildare Development Plan 2023-2029 is supported by a Strategic Flood Risk Assessment (SFRA). In the CDP, the enterprise park is zoned for 'Objective H3: Industry / Warehousing' on the Ladytown and Environs settlement mapping. Under the Planning Guidelines, this is considered to be a less vulnerable use and is therefore appropriate in Flood Zone B without the need to carry out either a Plan Making or Development Management Justification Test. Lands surrounding the enterprise park are zoned 'Objective I – Agriculture'. However, certain areas within the enterprise park are highlighted as requiring a flood risk assessment.

The SFRA Report's *'The PFRA [OPW's Preliminary Flood Risk Assessment] mapping highlights clusters of pluvial risk within the business park. Surface water and drainage should be addressed in SSFRAs.'* It goes on to state that '*There is very little flood risk identified in this area and there is no Justification Test required.*

The enterprise park and surrounding lands are in Flood Zone C and appropriate for all forms of development, subject to the preparation of a land use strategy and detailed proposals for surface water management as part of the assessment.

As part of the detailed design of the enterprise park expansion, an assessment of surface water mechanisms and risks to the existing enterprise park and the expansion areas will be undertaken, and the design of the surface water drainage system carried out by JBA as appropriate.

JBA concluded that the proposed expansion of the Naas Enterprise Park can be carried out in a manner which is in accordance with the Planning System and Flood Risk Management Guidelines, and it is appropriate to rezone portions of the I - Agriculture zoning to H3 – Industry / Warehousing.

9.6 Architectural Analysis – BKD

BKD Architects have prepared masterplanning documentation for the proposed rezoning of lands adjacent to Naas Enterprise Park with the intention of expanding the park to facilitate the following objectives. This is appended to the rear of this report and we refer the reader to same.

- To create a market Leading Business Park
- Improved Site Amenity
- Enhance connectivity / infrastructure within the enterprise park
- Implement leading sustainability credentials
- Create an attractive workplace
- Facilitate major landscape intervention
- Enhance the public realm
- Improve the community environment

9.7 Kildare District Underage League Playing Fields

It has been noted that a portion of the subject lands are currently in the use of the Kildare District Underage League (KDUL). As is evidenced by the extensive planning history associated with this user, at this site, it is clear that the Council view this land use as incompatible with the overall functioning and operations at the Enterprise Park.

For the first time, in the history of the KDUL, an opportunity now presents to relocate the KDUL to a more suitable location and to financially assist with the establishment of new facilities.

As part of the rezoning strategy, Palm Logistics intend to facilitate the Kildare Underage District League moving to more suitable and modern facilities.

Location of KDUL Playing Fields

10 Summary Points in Support of a Rezoning

It can be concluded that the re-zoning of lands to the south of the current Naas Enterprise Park represents a logical extension of the NEP and an aspect of infill development, **robustly supported by strong demand analysis focusing attention on the supply issues** in Kildare and specifically at Naas Enterprise Park.

The Draft Plan already acknowledges the need for the balanced expansion of employment opportunities located in areas "which do not undermine the attractiveness or viability of the County towns" towards designated employment areas like the Ladytown Local Area Plan which encompasses the Naas Enterprise Park.

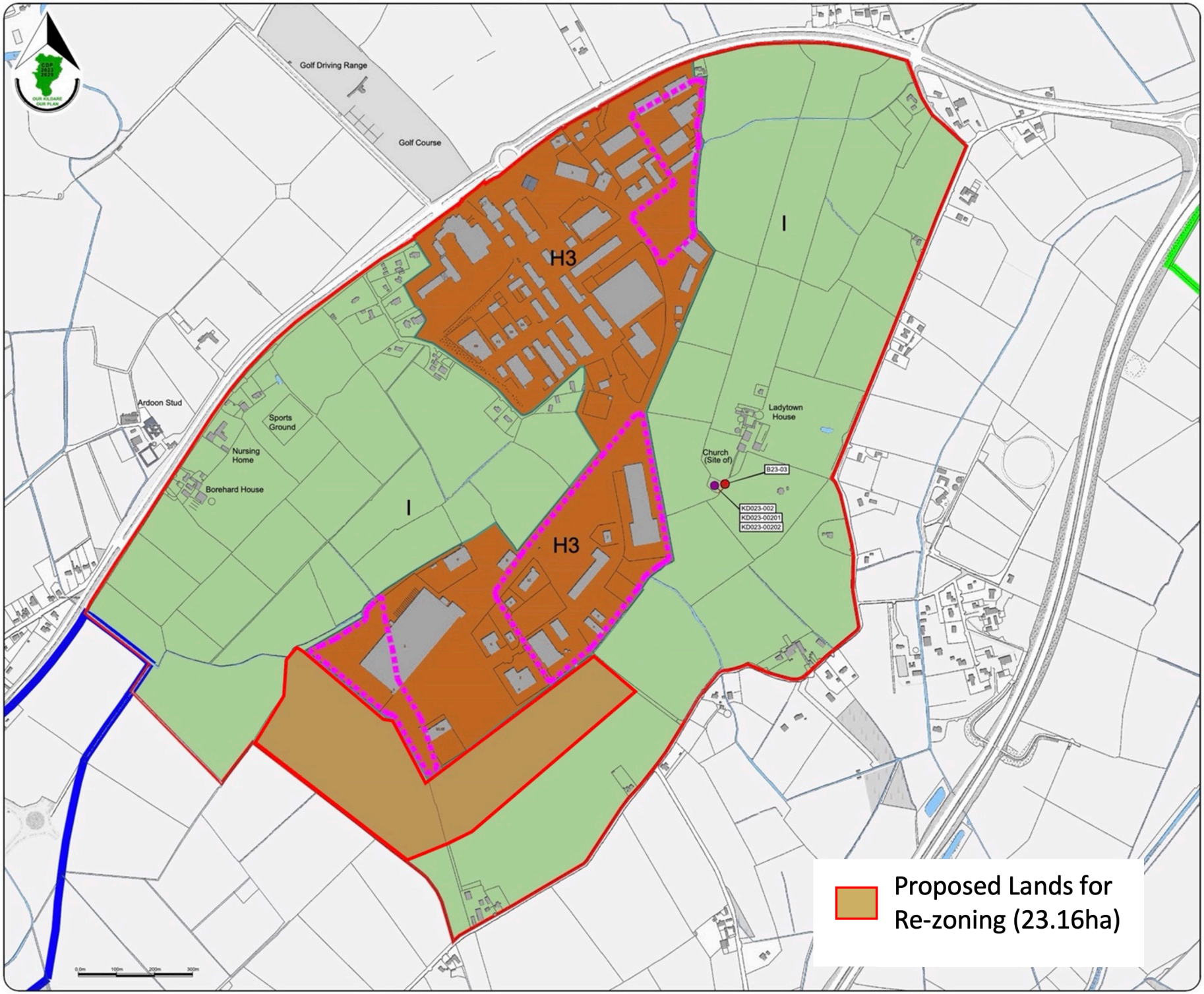
It has been identified that the current Local Area Plan for Naas reduced the lands zoned for Employment, Industry & Warehousing. This proposal for the expansion of zoned lands at Naas Enterprise Park will address the loss of available land in demand and attempt to match supply to demand and thus retain investment in the County.

The rezoning of these lands at Naas Enterprise Park will ultimately stimulate further enterprise, jobs, and economic growth in a sustainable manner at a proven location.

We can conclude that re-zoning this land is in accordance with proper planning and sustainable development, makes efficient use of serviced lands, and is a logical, and sequential way to deal with a conclusive supply/ demand issue.

We request the Planning Authority to rezone the identified subject site, as requested.

APPENDICES



Kildare County Council
Planning & Strategic Development Department
Áras Chill Dara,
Devoy Park, Naas, Co Kildare.

Ladytown
Draft County Development Plan 2023 - 2029

Legend :

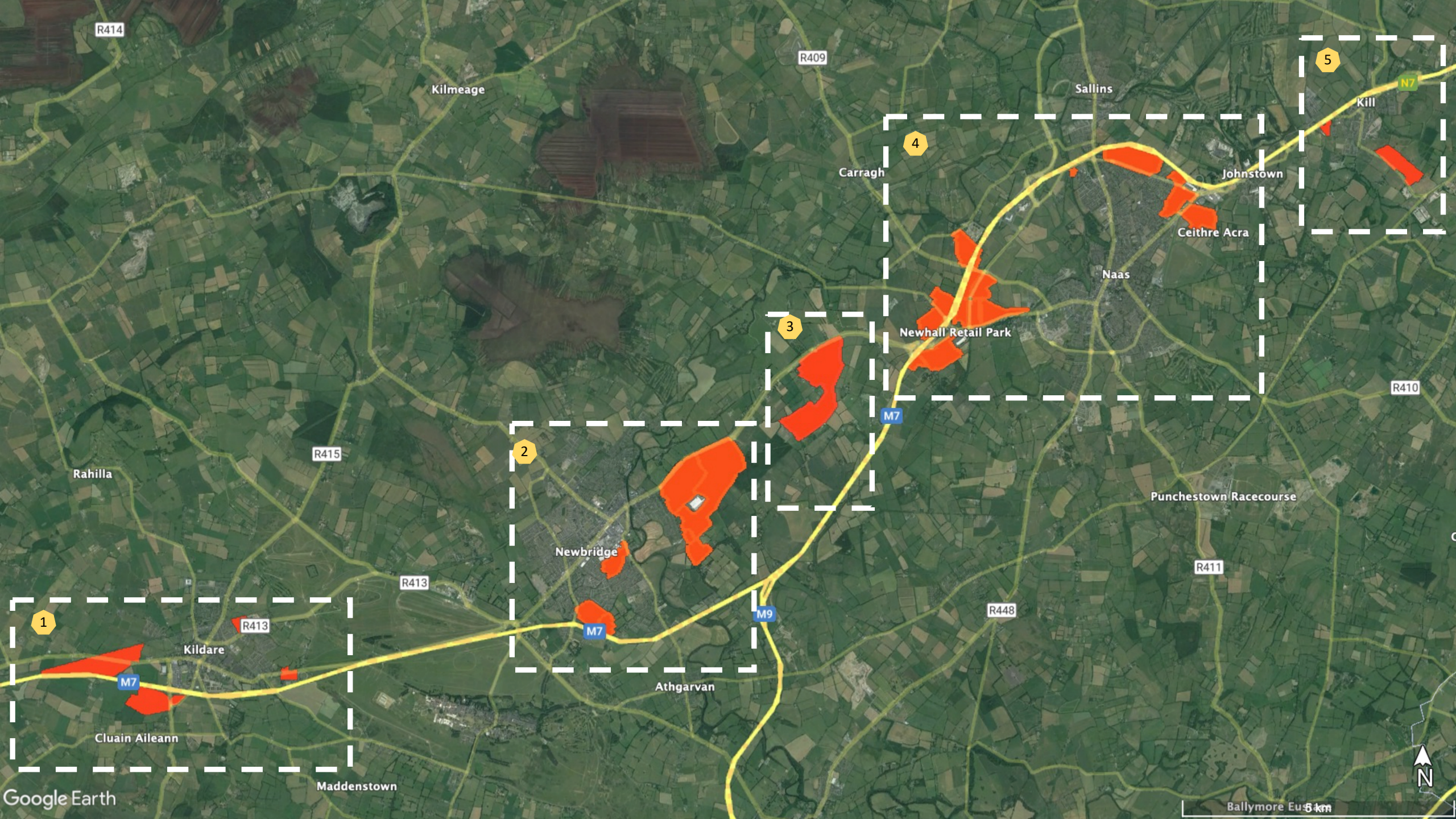
- Environs Boundary
- H3: Industry / Warehousing
- I: Agriculture
- RMP Record of Monuments and Places
- RPS Record of Protected Structures
- Flood Risk Assessment
- Naas LAP
- Newbridge LAP

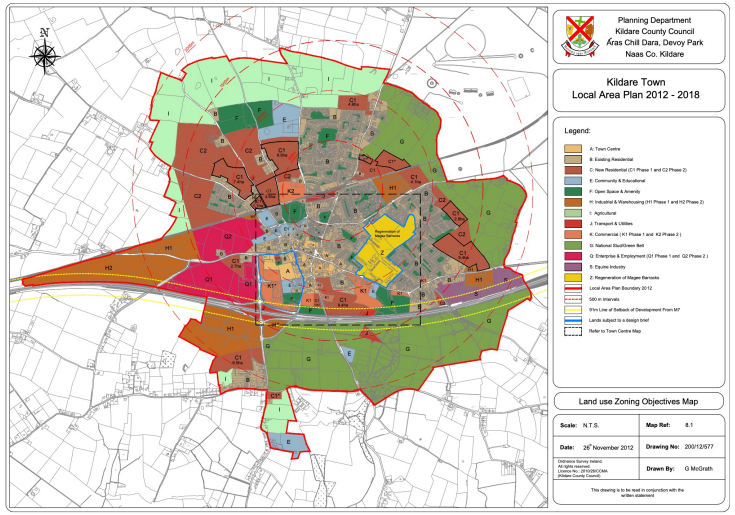
Stage	Date	Description
Draft County Development Plan	14/03/2022	Draft Plan issued for Public Consultation.
Draft County Development Plan	12/12/2021	Draft Plan issued to Elected Members

Environs Plan

Scale: N.T.S.		Map Ref.:	V2 - 2.2
Date: February 2022		Drawing No.:	200/21/1175
Drawn by: D Dolan Date: 10/02/2022	Checked by: L Crawford Date: 10/02/2022	Approved by: C O'Donnell Date: 10/02/2022	

This drawing is to be read in conjunction with the written statement


R414
R409
Kilmeage
Sallins
Kill
N7
5
4
Carragh
Johnstown
Ceithre Acra
Naas
Newhall Retail Park
3
M7
R410
2
R415
Rahilla
Punchestown Racecourse
Newbridge
R411
R413
M9
R448
M7
1
R413
Kildare
M7
Athgarvan
Cluain Aileann
Maddenstown
Google Earth
N
5 km



Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Kildare Town	Whitesland West Business Park (H1)	*1A*	**13.9**	
	Whitesland West Business Park (H2)	*1B*	**33.6**	
	Greyabbey -1	*1C*	**27.6**	
	Greyabbey -2	*1D*	**3**	
	Curraghfarm -1	*1E*	**4.12**	
	Curraghfarm -2	*1F*	**0.77**	
	Kildare Business Park	*1G*	**7.25**	
				90.24

DRAWING TITLE

Industry/Warehousing – Naas/Newbridge

BROCK MCCLURE

63 York Road

Dun laoghaire, Co. Dublin

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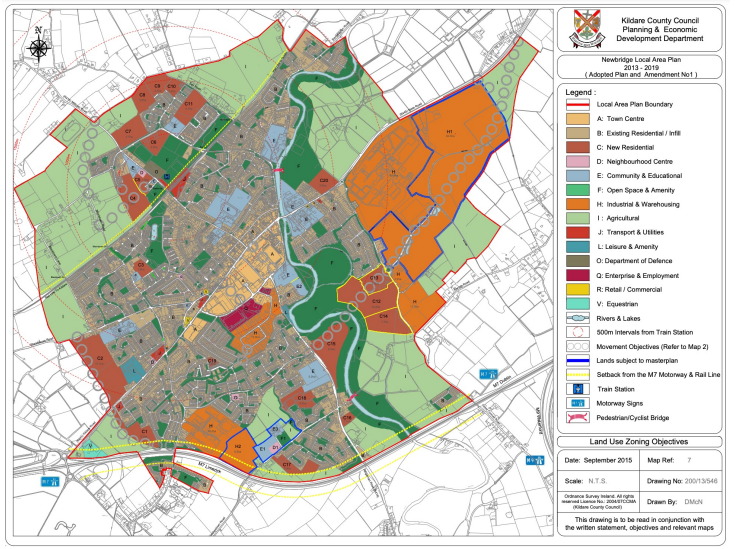

Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Newbridge	Little Connell - H	*2A*	55.9	
	Little Connell (H1 : Masterplan)	*2B*	94.5	
	Great Connell -1	*2C*	3.2	
	Great Connell -2	*2D*	11.8	
	Newbridge Industrial Estate	*2E*	12.8	
	Crotanstown	*2F*	16.3	
	IDA Business Park (H2 : Masterplan)	*2G*	9.2	
				203.7

DRAWING TITLE

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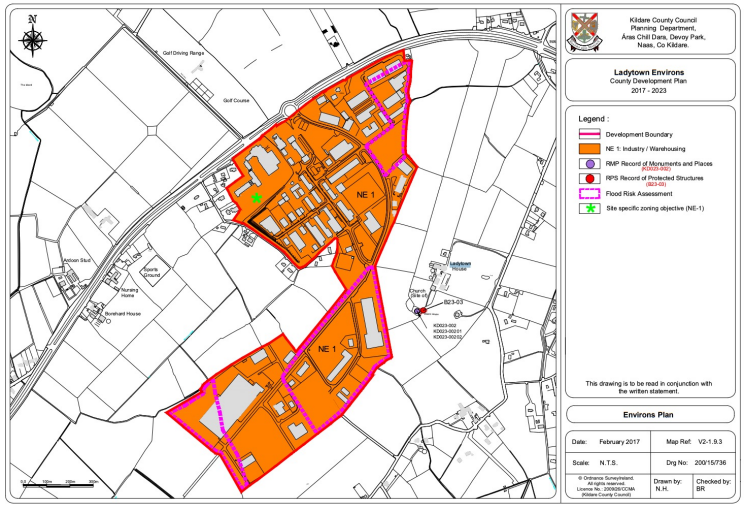

Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Ladytown Business Park		3A	86	86

DRAWING TITLE

Industry/Warehousing – Naas/Newbridge

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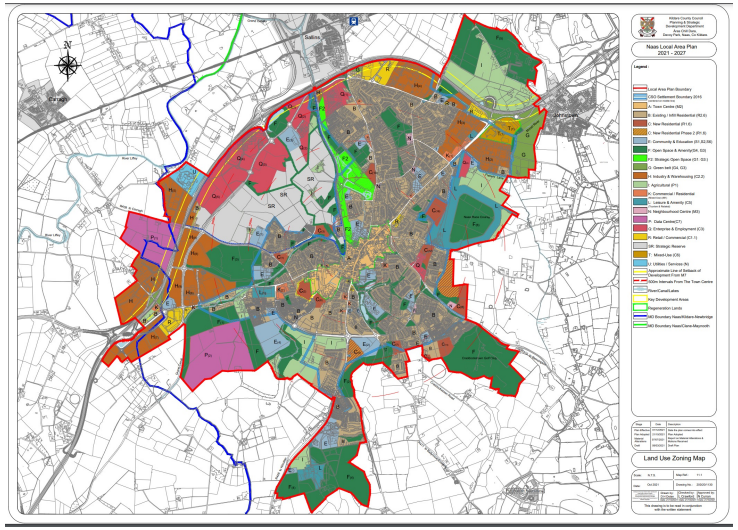

Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Naas	Naas Industrial Estate	*4A*	**20**	
	Maudlins	*4B*	**17.7**	
	Monread Road, Maudlins	*4C*	**4.75**	
	Monread Industrial Estate	*4D*	**36.6**	
	Millenium Business Park	*4E*	**0.83**	
	Oberstown Industrial Park -1	*4F*	**17.4**	
	Oberstown Industrial Park -2	*4G*	**2.56**	
	Milennium Park -1	*4H*	**11.9**	
	Milennium Park -2	*4I*	**9.2**	
	Jigginstown	*4J*	**9.78**	
	Southern Link Business Park	*4K*	**26.1**	
	M7 Business Park & Motor Park	*4L*	**31.3**	
	Newhall Retail Park - 1	*4M*	**25.7**	
	Newhall Retail Park -2	*4N*	**4.61**	
				218.43

DRAWING TITLE

Industry/Warehousing – Naas/Newbridge

Brock McClure
Planning & Development Consultants

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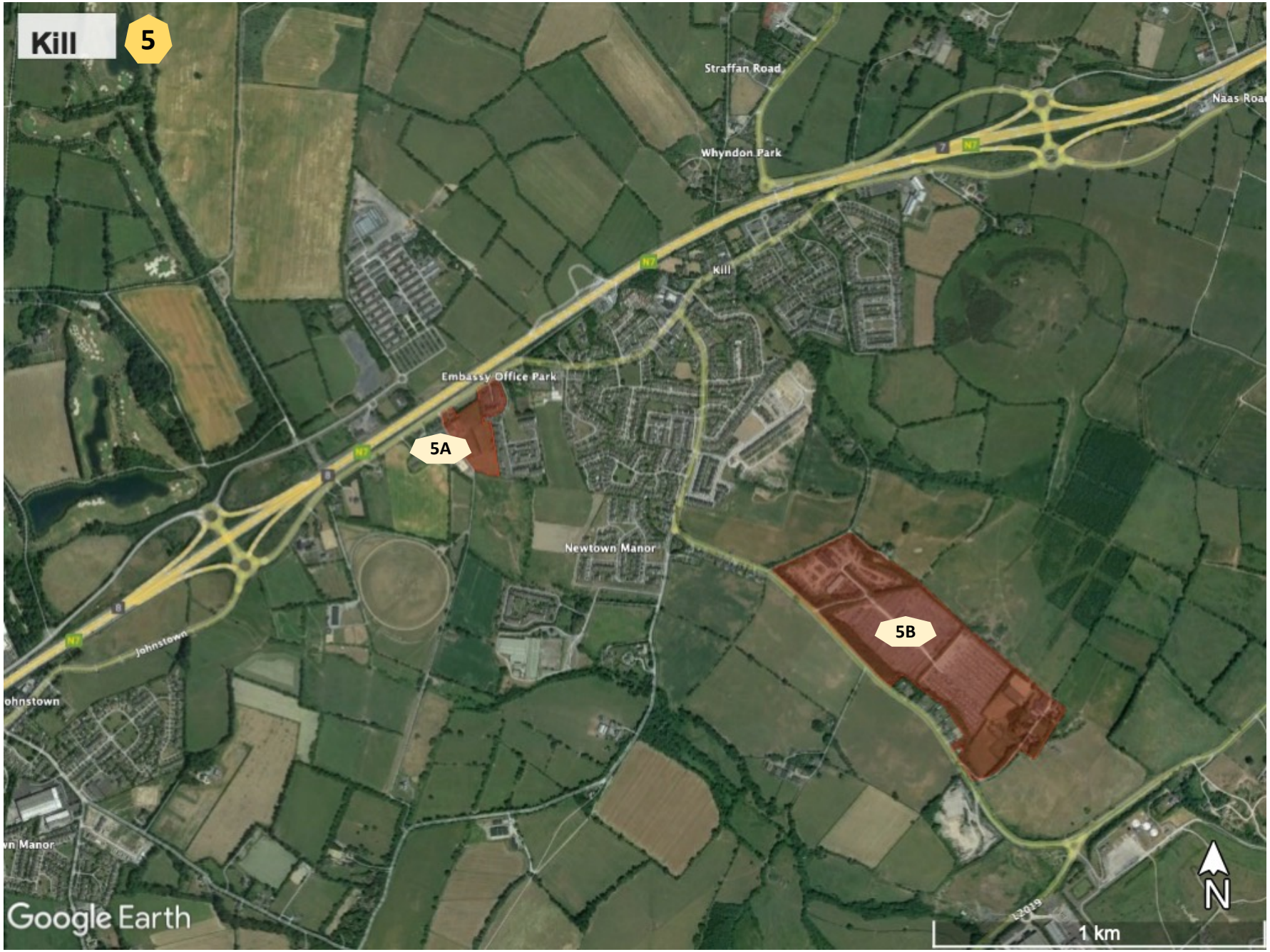

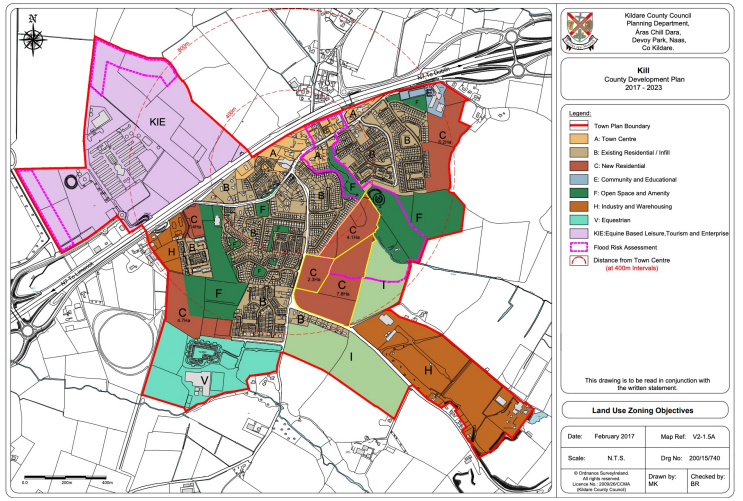

Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Kill	Embassy Office park	5A	2.82	
	Hartwell Lower	5B	23.8	
				26.62

DRAWING TITLE

Industry/Warehousing – Naas/Newbridge

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Name	Site Location	Ref. Code (on map)	Area (in Ha)	
Kildare Town	Whitesland West Business Park (H1)	*1A*	**13.9**	
	Whitesland West Business Park (H2)	*1B*	**33.6**	
	Greyabbey -1	*1C*	**27.6**	
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	Curraghfarm -1	*1E*	**4.12**	
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	Kildare Business Park	*1G*	**7.25**	
				90.24
Newbridge	Little Connell - H	*2A*	**55.9**	
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	Great Connell -1	*2C*	**3.2**	
	Great Connell -2	*2D*	**11.8**	
	Newbridge Industrial Estate	*2E*	**12.8**	
	Crotanstown	*2F*	**16.3**	
	IDA Business Park (H2 : Masterplan)	*2G*	**9.2**	
				203.7
Ladytown Business Park		*3A*	**86**	**86**
Naas	Naas Industrial Estate	*4A*	**20**	
	Maudlins	*4B*	**17.7**	
	Monread Road, Maudlins	*4C*	**4.75**	
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	Newhall Retail Park -2	*4N*	**4.61**	
				218.43
Kill	Embassy Office park	*5A*	**2.82**	
	Hartwell Lower	*5B*	**23.8**	
				26.62
TOTAL		**Approx.**		**624.99**

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5th May 2022

CBRE OBSERVATIONS ON LANDS AT NAAS ENTERPRISE PARK, CO. KILDARE

CBRE, at the invitation of Green Urban Logistics DevCo Limited, have inspected lands at Naas Enterprise Park, Co. Kildare with a view to commenting specifically on the supply of and demand for industrial zoned land and buildings on the N7 road corridor as well as within the Naas Enterprise Park scheme. CBRE are Ireland's largest full-service property consultancy firm. We are actively involved in the sale and acquisition of land to facilitate the development of industrial and logistics buildings as well as the sale and letting of completed buildings for occupiers and investors. The company's research & consulting team meanwhile track sales and leasing activity in the industrial and logistics sector in Dublin providing comprehensive statistics on supply, demand, take-up and investment volumes and pricing within the sector. CBRE are therefore well placed to comment authoritatively on trends in the industrial sector and supply and demand dynamics in the Naas market.

EXECUTIVE SUMMARY

- Structural shifts in Ireland's economy over the last decade coupled with supply chain and distribution changes that have become even more pronounced since Brexit and the onset of the Covid-19 pandemic, have seen unprecedented demand for modern industrial and logistics accommodation in the Irish market. This trend is particularly evident in the Greater Dublin Area and along major road arteries such as the N7 which is the primary distribution channel connecting the cities of Dublin, Cork and Limerick. For many years, the N7 road corridor has been the preferred location for industrial & logistics occupiers.
- In addition to scarcity in other locations which has been displacing an increasing proportion of demand to the Naas/Newbridge area, a significant driver of demand to this particular location is the upgrade and widening of the M7 motorway, which was completed in 2020. The development of this new three-lane carriageway has been instrumental in attracting an increasing number of occupiers to developing and occupying premises and facilities in the Naas/Newbridge area in recent years. However, supply of both

land and buildings is extremely low at present and this is compromising the ability of Kildare County Council to capitalise on huge opportunity.

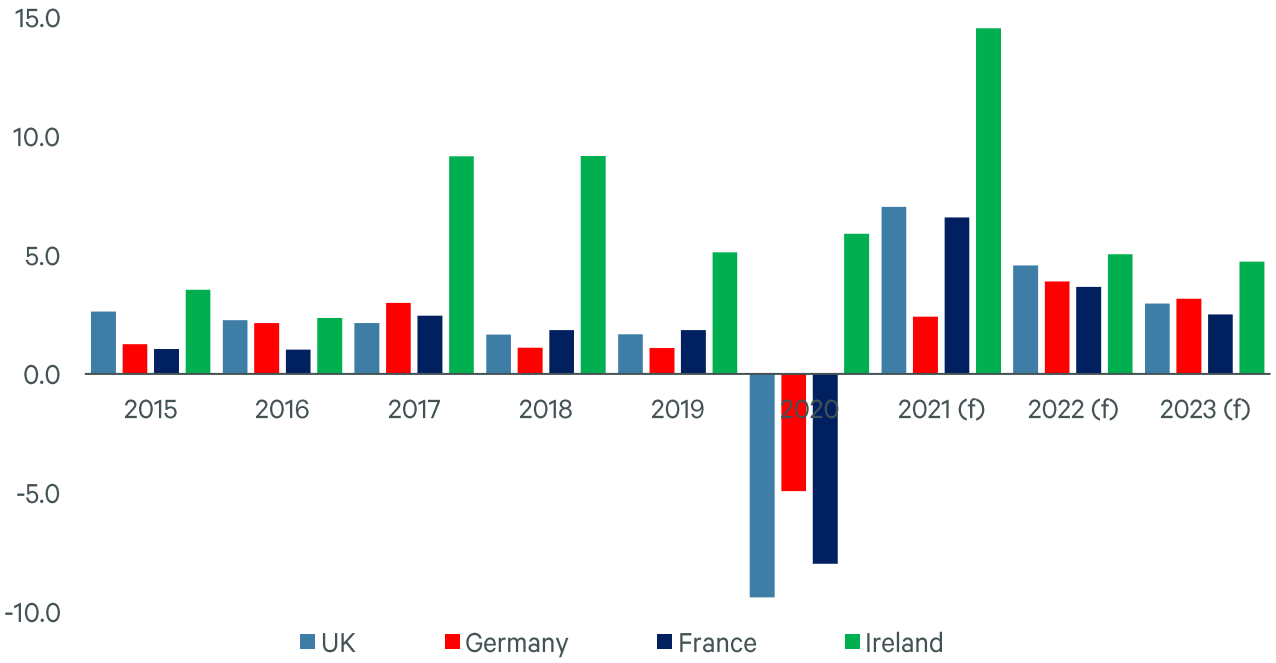
- The vacancy rate along the M7 Corridor from Junction 9 (Naas North) to Junction 12 (Kildare Town) is currently in the order of 1% with virtually no vacant stock available. Meanwhile, the availability of zoned and serviced land is extremely compromised. Indeed, there is only 151.2 acres of zoned land available in the Naas/Newbridge corridor at present, which we anticipate will be absorbed within the next 3 years. This leaves extremely limited availability of zoned land; which will result in displacement to other locations and impact negatively on future employment in Naas in due course.
- Within the subject scheme there are currently only 8 potential zoned development sites, of which 50% only have capacity to deliver small buildings. While CBRE Research indicates demand in this location is for buildings extending up to 25,000m^2, there are literally no zoned sites capable of accommodating a building of this size within the subject scheme at present.
- If requirements are to be fulfilled and Kildare County Council to fully benefit from the pent-up demand for both land and facilities in the Naas/Newbridge region, it is clear that additional land will need to be rezoned to facilitate this. If this does not occur, many existing occupiers such as DSV (who are a significant employer within Naas Enterprise Park), will have no option but to relocate to other areas in order to accommodate anticipated growth while new occupier demand and job creation will also be concentrated elsewhere.

Economic Overview

Ireland is a small open economy that has transformed in recent decades to become one of the best performing economies in the Eurozone. Indeed, Ireland was the fastest growing economy in Europe over the last cycle, outperforming most other European economies in the period up to 2019 and when rated in terms of GDP per capita, is the second richest country in the European Union after Luxembourg, according to Eurostat. Despite the very severe impact that Covid-19 had on economic growth worldwide during 2020 and 2021, the Irish economy continued to perform comparatively well regardless, achieving positive economic growth of 5.9% during 2020 despite most major economies recording a decline as a direct result of the pandemic.

Boosted by a significant rebound in the economy as pandemic restricts began to ease last year, GDP growth of 14.5% was achieved in Ireland in 2021 (See Figure 1). This performance was underpinned by the concentration of large multinational employers in Ireland, in sectors such as technology and pharmaceuticals, which to a large degree were unaffected by the pandemic. CBRE expect Ireland to generate GDP growth of more than 5% in 2022 albeit some economic houses are forecasting even stronger growth for the Irish economy this year.

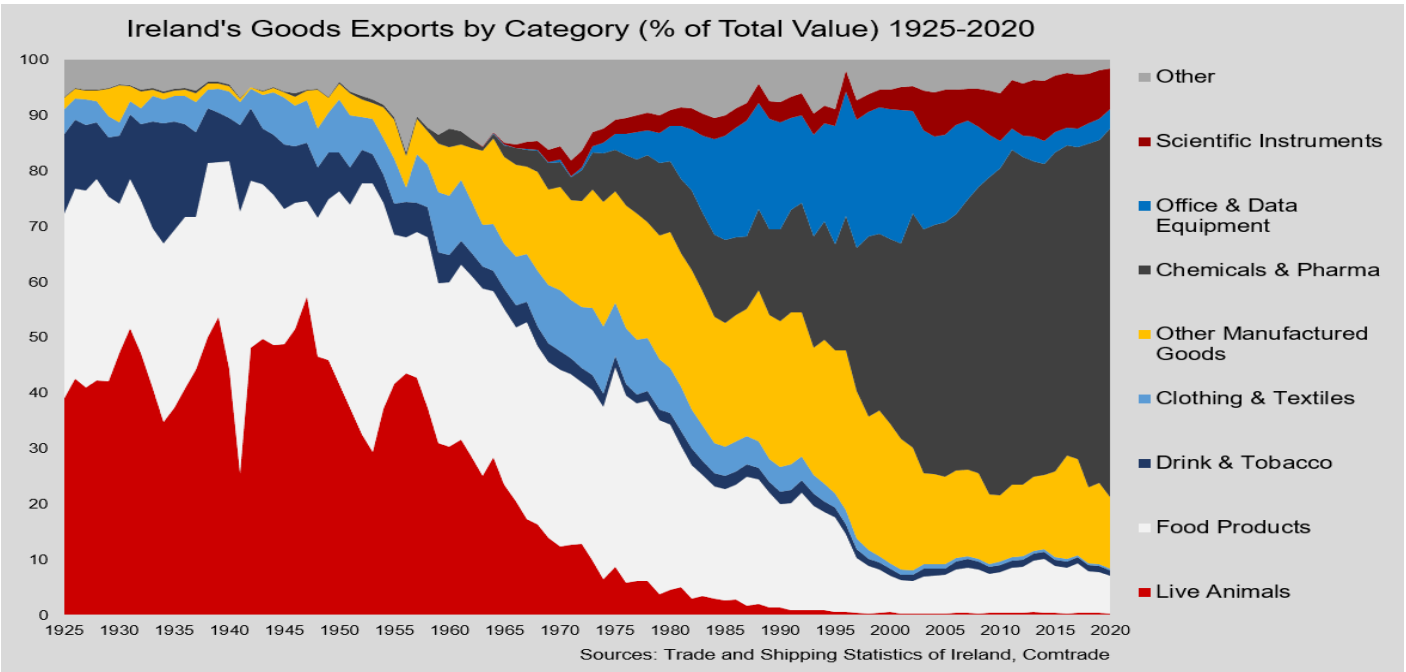
Figure 1 - Ireland GDP Growth Compared 2015 - 2023(f)



Source: CBRE Research

By all accounts, Ireland is set to continue its outperformance of the broader Eurozone in 2022 & 2023, primarily due to the strength of the country's multinational employer base, largely made up of pharmaceutical, financial and technology companies. Over recent decades, Ireland's economy has transformed, with economic performance now more influenced by the export of services than physical goods. Indeed, analysis of Ireland's goods export performance over the last century conducted by Comrade clearly shows the dramatic shift and the notable increase in exports of med-tech, chemicals, and pharmaceuticals (See Figure 2).

Figure 2 - Ireland Goods Exports By Category



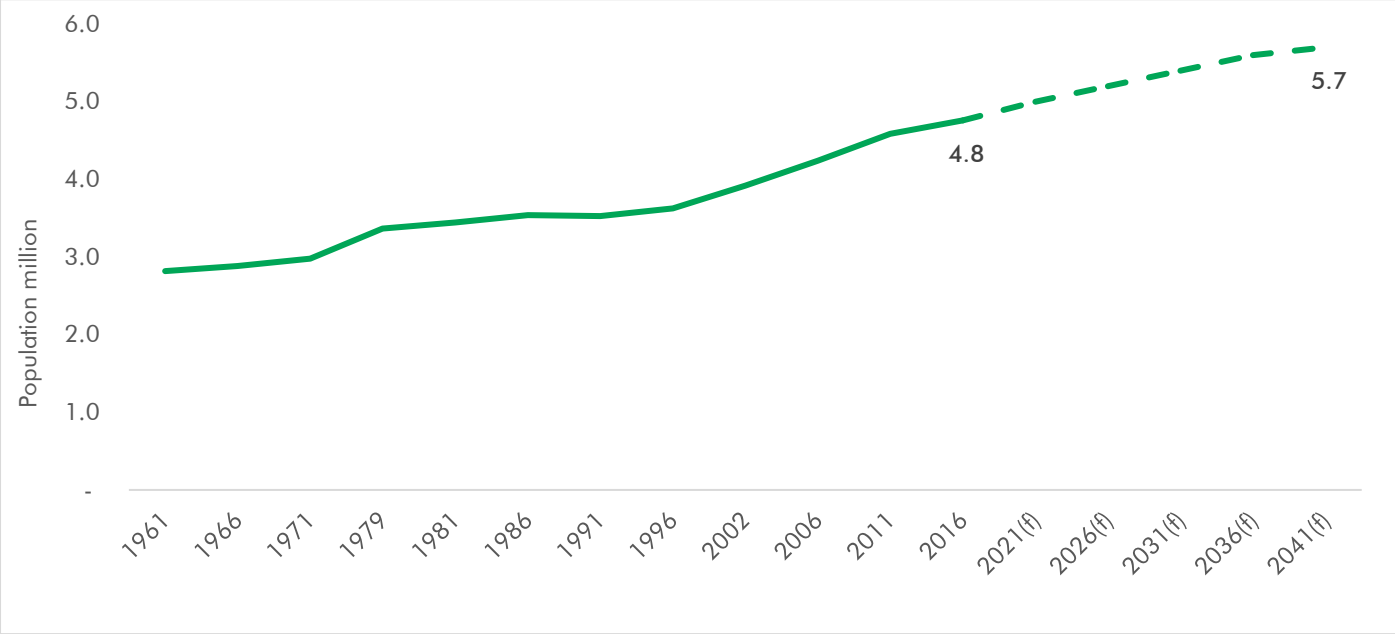
Source: Comtrade

More than 36% of Irish economic output now emanates from industry, 14% from ICT activity & 12% from distribution, transport, hotels & restaurants with a large proportion of economic activity concentrated in the Greater Dublin Area, which includes the counties surrounding Dublin, namely Meath, Kildare and Wicklow.

Ireland's Demographics

Ireland's population growth in recent decades has been remarkable, having increased from 2.8 million people in 1961 to 4.8 million people in 2016 when Ireland's last Census of Population was conducted. The population grew by over 1.2 million in the twenty-year period between 1996 and 2016 alone, boosted by a combination of natural population growth and positive net migration, which in turn has had implications for imports, exports and distribution (See Figure 3).

Figure 3 - Ireland Population Growth 1961 - 2041



Source: CSO

Ireland boasts the largest natural population growth rate in the Eurozone in addition to positive net migration trends, having even experienced positive net migration during 2020 despite the pandemic. The Central Statistics Office (CSO) postponed undertaking a new Census of Population in 2021 as a result of Covid-19 but estimate that Ireland's population has now exceeded 5 million people for the first time since 1851 and is expected to continue to grow over the coming years to reach an estimated 5.7 million by 2041.

The population of the county of Dublin meanwhile has grown from approximately 700,000 people in 1961 to 1.3 million people at the time of the last Census in 2016 and is now forecast to be in the order of 1.43 million, equating to 28.5% of the State population. In addition, the surrounding counties of Meath, Kildare, and Wicklow, which along with Dublin make up the Greater Dublin Area (GDA), have also seen phenomenal growth in recent decades. The population of the Greater Dublin Area (Dublin, Meath, Kildare & Wicklow combined) is currently approximately 1.9 million and is forecast to increase to approximately 2.4 million by 2041, by which time it will accommodate approximately 42% of the State population.

The latest Labour Force study for Ireland shows that more than 2.5 million people are classified as working in the Irish population. This is the highest rate of labour force participation since 1998. It is therefore no surprise that the current rate of unemployment in Ireland is now 5.1%, above pre-pandemic levels. This low level of unemployment will see further pressures in terms of labour market supply over the course of 2022 and 2023 and is likely to exacerbate wage cost inflation in the economy.

Industrial & Logistics Market Drivers

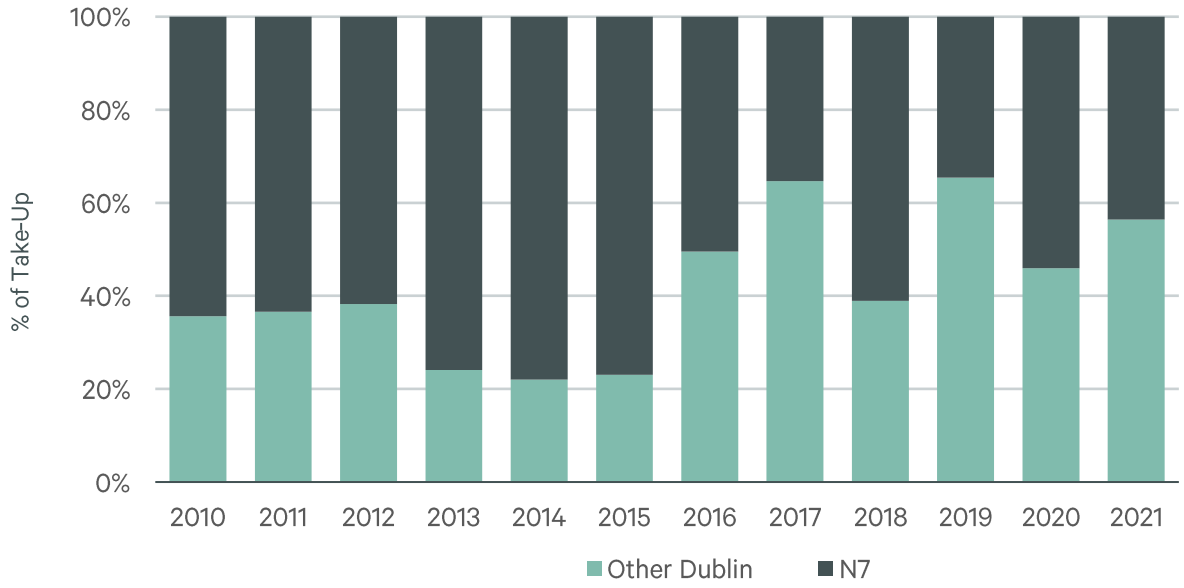
As Ireland's population has increased and its economy transformed over recent decades, the factors underpinning the need for modern industrial & logistics accommodation have changed considerably. As an economy traditionally reliant on manufacturing morphed into an economy led by the services sector, demand for modern industrial facilities increased exponentially. This trend has become even more pronounced since Brexit, which saw many companies and in particularly retailers, altering their supply chains and bringing an increasing proportion of their inventory distribution and supply chain activity in-country. **This structural shift has fuelled demand for modern industrial & logistics premises, particularly in the Greater Dublin Area and along major road arteries such as the N7 which is the primary road network connecting the cities of Dublin, Cork and Limerick.**

The onset of Covid-19 from March 2020 in turn fuelled a further notable increase in online retailing and Ecommerce penetration in Ireland and altered distribution patterns considerably. Many occupiers are looking for alternatives to routing goods through the UK landbridge and onto the island of Ireland through ports and airports and are now holding increased volumes of inventory in-country, all of which has led to an increase in demand for additional industrial facilities. Supply of modern accommodation remains severely constrained which in turn is necessitating the delivery of new accommodation to meet end user demand. Indeed, the vacancy rate within the Top 35 industrial schemes in the Dublin region is currently in the order of only 2.83% while **the vacancy rate along the M7 Corridor from Junction 9 (Naas North) to Junction 12 (Kildare Town) is currently in the order of 1% with virtually no vacant stock available.**

Take-Up Activity on the N7 Road Corridor

According to CBRE research, a total of 2.85 million square metres (30.7 million square feet) of industrial and logistics buildings have been let or sold in Dublin since 2010, of which 60% occurred in the period 2016-2021. According to our research, **56% of all industrial and logistics take-up that has occurred since 2010 has been concentrated on the N7 road corridor, with this location consistently proving most popular with industrial & logistics occupiers**, many of whom look to cluster alongside similar industries in established industrial locations (See Figure 4).

Figure 4 - N7 Take-Up as % of Overall Take-Up 2010 - 2021



Source: CBRE Research

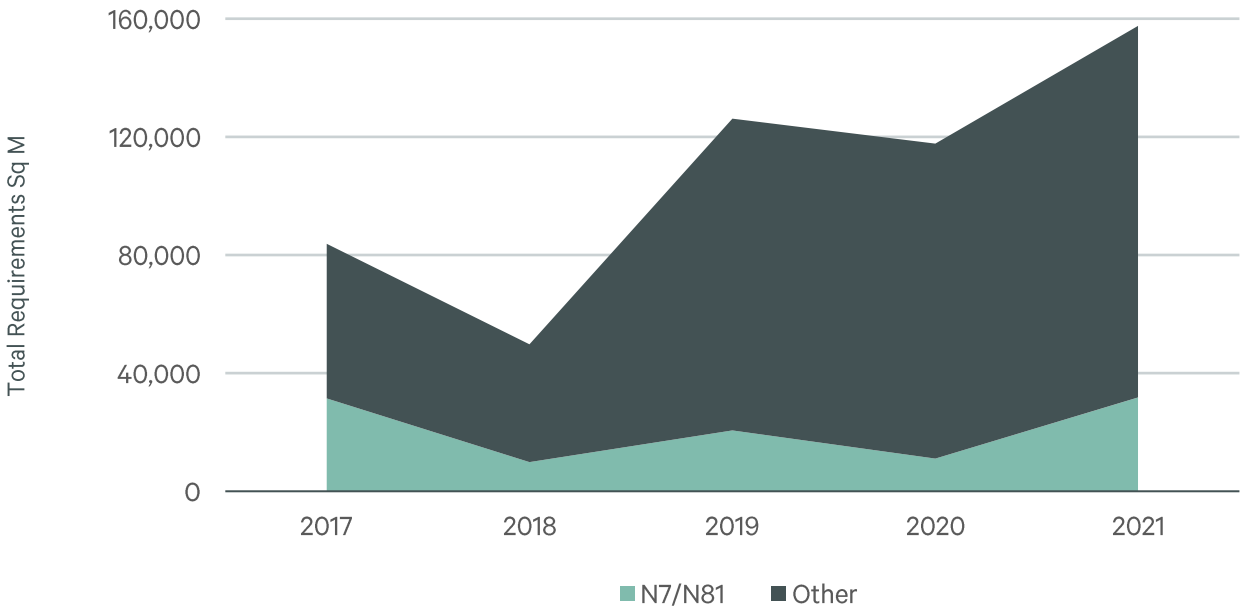
In the last five years, a total of 790,635m^2 (8.5 million square feet) of industrial and logistics accommodation has been sold or let along the N7 road corridor, accounting for 46% of total industrial take-up since 2016. This is exclusive of land that has been acquired to facilitate the development of 'build to suit' options or office leasing activity that has occurred in this location in the period. **The N7 road corridor is therefore home to a considerable concentration of industrial & logistics employment, none of which would have been in a position to opt to locate here or create jobs in the area if sufficient land had not been zoned for NE1 – Industry & Warehousing use or if sufficient buildings were not available.**

Although the pace of sales and leasing activity in the industrial and logistics sector has picked up in the last number of years, the overall proportion of this activity concentrated along the N7 road corridor has decreased proportionately. Indeed, the scarcity of zoned land in South Dublin County Council local authority area has led to considerable displacement to other locations such as Fingal County Council area to the north of Dublin and also to Kildare considering its strategic location on the strategic N7 corridor.

Demand for Accommodation on N7 Road Corridor

As is demonstrated above in Figure 4, for many years, the N7 road corridor has been the preferred location for industrial & logistics occupiers, a trend that has escalated further following significant road improvements in recent years. While the N7 road corridor remains the preferred location for approximately 20% of current industrial occupier requirements, the scarcity of land and buildings on this preferred road network is now displacing demand to other locations (See Figure 5).

Figure 5 - Demand for Industrial & Logistics Accommodation 2017 - 2021 by Preferred Location



Source: CBRE Research

Demand for both land and buildings in Kildare has become even more pronounced in the last two-year period. The increased displacement of industrial and logistics activity to Kildare is evident from several recent lettings and sales in the Kildare region with EZ Living having recently acquired a 23.6-acre site in Newbridge to develop a new distribution facility; Primark having committed to developing a new 46,468m^2 state-of-the-art distribution facility in Newbridge; Dr Pepper having developed a 30,669m^2 facility at Newbridge and Lidl having developed a 50,185m^2 distribution centre in the area. IITD also recently acquired a 9-acre facility and constructed a 5,574m^2 distribution facility at Osberstown in Naas.

In addition to scarcity in other locations which has been displacing an increasing proportion of demand to the Naas/Newbridge area, a significant driver of demand to this location is the upgrade and widening of the M7 motorway, which was completed in 2020. The development of this new three-lane carriageway has been instrumental in attracting an increasing number of occupiers to developing and occupying premises and facilities in the Naas/Newbridge area. Demand for facilities in the location therefore comprises a combination of expansionary requirements from existing occupiers as well as requirements from a range of new occupiers looking for land and facilities in the region, following the examples of recent arrivals such as Primark, Lidl, EZ Living and Dr Pepper.

If requirements are to be fulfilled and Kildare County Council to fully benefit from the pent-up demand for both land and facilities in the Naas/Newbridge region, it is clear that additional land will need to be rezoned to facilitate this. This demand is current now meaning that rezoning additional land needs to occur in the 2023-2029 development plan to accommodate it.

There is clear evidence of demand for industrial and logistics facilities of all sizes in the Naas/Newbridge area at present, ranging from requirements for incubator units extending to approximately 300m^2 through to large facilities extending up to 25,000m^2, with enquires emanating from both manufacturing, service, and supply chain occupiers. Domestic occupiers that have experienced growth within their specific sectors over recent years are seeking to expand their occupied space to cater for further growth. These requirements are being generated from both existing occupiers within Co. Kildare and from companies currently located in the Midlands and Munster who see the Naas/Newbridge area of Kildare as a key location. There is also evidence of international occupiers seeking to establish a presence in the Republic and focussing attention on this part of Kildare due to supply constraints in the wider Dublin area. There is also evidence of requirements from existing multinationals already established in Co. Kildare such as Intel and Pfizer. Many of these domestic and international requirements were put on hold during the pandemic but are now being enacted as companies reignite expansion and relocation plans.

In addition to demand for buildings, demand for zoned and serviced industrial land in Co. Kildare is currently very strong. Due to the scarcity of standing industrial stock, many occupiers are seeking to acquire sites and develop their own facilities to accommodate further expansion.

Supply on the N7 Road Corridor

While the Naas/Newbridge area has traditionally had a consistent volume of demand for industrial and logistics accommodation, there has been limited modern stock developed in the region in the last decade. Much of the recent stock has been developed on a design & build basis with limited vacancy within the more established industrial estates in the region. Examples of occupiers with sizeable landholdings and large facilities in the area include Pfizer, Aldi, Irish Commercials, Queally Group and Applegreen.

According to local commercial property agent Darac O'Neill, of O'Neill & Co Chartered Surveyors **despite evidence of strong demand, no new industrial and logistics facilities have been constructed on a speculative basis, in the Naas/Newbridge area since the mid-2000's.** As a result, demand over recent years has had been catered for from existing stock levels. The vacancy rate within industrial estates in the region is minimal with some estates such as the M7 Business Park, the Southern Link Business Park, Maudlins Industrial Estate and Naas Industrial Estate having had limited or no vacancy since 2019. As a consequence of a continual rise in demand, with stock levels not being replaced, there in now an inadequate supply of this asset class to satisfy current demand. A pattern of rising rents over the past 4 years further demonstrates this shortage.

An analysis of the most recent Kildare County Council local authority development plan clearly shows that the **vast majority of land zoned for industrial use has been fully utilised in the period since the development plan was implemented with negligible vacancy in any of the established industrial schemes in the popular Naas/Newbridge area and demand considerably outstripping the supply of zoned land in the area.** Land values have been steadily increasing as a result, particularly for smaller serviced lands with access to good road networks. There has been very little land brought to the market in recent years which has resulted in competitive bidding when sites have come

available. In any event, there are very few sites along the N7/M7 corridor that are zoned and serviced and available for development. Figure 6 below demonstrates the shortage of available land in the Naas/Newbridge corridor.

Figure 6 – Current Zoned Land in Naas/Newbridge Corridor

Location	Site Location	Acres	
Kildare Town	Whitesland West Business Park (H1)	34.35	Services issues
	Whitesland West Business Park (H2)	83.03	Services issues
	Greyabbey -1	68.20	Services issues
	Greyabbey -2	7.41	Services issues
	Curraghfarm -1	10.18	Owner Occupied
	Curraghfarm -2	1.90	Owner Occupied
	Kildare Business Park	17.91	Fully occupied units, former factory. Vacant site sold off for owner occupation.
		222.98	
Newbridge	Little Connell - H	138.13	Fully occupied
	Little Connell (H1 : Masterplan)	233.51	Primark, IDA, Eazy Living Furniture
	Great Connell -1	7.91	Occupied
	Great Connell -2	29.16	Available but access road is poor.
	Newbridge Industrial Estate	31.63	Fully occupied
	Crotanstown	40.28	Fully occupied
	IDA Business Park (H2 : Masterplan)	22.73	IDA restricted user covenant.
		503.34	
Naas	Naas Industrial Estate	49.42	Fully Occupied
	Maudlins	43.74	Fully Occupied
	Monread Road, Maudlins	11.74	Recently transacted.
	Monread Industrial Estate	90.44	Predominantly all occupied. Vacant lands in ownership of Quelly Group & Local Developer
	Millenium Business Park	2.05	Owner occupied
	Oberstown Industrial Park -1	43.00	Fully occupied
	Oberstown Industrial Park -2	6.33	Owner occupied
	Milennium Park -1	29.40	Available
	Milennium Park -2	22.73	Available
	Jigginstown	24.17	Available
	Southern Link Business Park	64.49	Fully occupied, lands are owner occupied
	M7 Business Park & Motor Park	77.34	Fully occupied, lands are owner occupied
	Newhall Retail Park - 1	63.50	Available
	Newhall Retail Park -2	11.39	Available
		539.74	
Kill	Embassy Office park	6.97	Fully occupied
	Hartwell Lower	58.81	Owner occupied
		65.78	
TOTAL		**1331.84**	

Source: CBRE Research/Brock McClure/O'Neill & Co

It can clearly be seen from Figure 6 above that of the 1331.84 acres of land zoned for industrial use in the Naas/Newbridge area of County Kildare, much of this land is either not available for development or has access or services issues. Indeed, of the 30 instances of zoned land identified, there are only 6 land parcels capable of development, equating to only 13.5% of the total acreage. There is no availability near Kildare Town while the only site that is available in the Newbridge area has particular access issues. When this site is removed, there remain only 5 instances of availability in the Naas area, two of which are located at Millennium Park and two of which are located at Newhall Retail Park with one other land parcel located at Jigginstown. These 5 sites between them equate to just over 11% of the entire 1,331.84 acres that are zoned for development in this part of Kildare. **In total, there is only 151.2 acres of industrial land available for immediate development in the entire Naas/Newbridge corridor of Kildare. Given the demand from occupiers and the current build ratio, these lands are likely to be fully occupied within the next 3-year period.**

Availability Within Naas Enterprise Park

Aside from general availability within the Naas/Newbridge area, there is limited availability within the subject scheme. Indicative drawings prepared by BKD Architects confirms that there are currently only 8 potential zoned development sites with the Naas Enterprise Park scheme, of which 50% only have capacity to deliver small buildings. Three of the sites are capable of accommodating a requirement of approximately 1,000 square metres while a fourth could potentially accommodate a building of approximately 3,000m^2. Of the other 50%, there are three sites capable of accommodating buildings extending to between 5,000 and 6,000m^2 and only one site capable of accommodating a requirement of between 10,000 and 14,000m^2. **While CBRE Research indicates demand in this location is for buildings extending up to 25,000m^2, there are literally no zoned sites capable of accommodating a building of this size within the subject scheme at present.**

This contrasts with leading business parks and high-quality purpose-built schemes such as Park Developments scheme at Northwest Logistics Park in the Fingal region of Dublin, where existing individual buildings, planning permissions and buildings under construction range in size from approximately 3,723 m^2 to 25,000 m^2 and where just under 60% of the scheme has accommodated requirements extending to more than 25,000m^2. Similarly, another high-profile scheme, Mountpark Baldonnell II, developed by Mountpark at Baldonnell Business Park in the South Dublin County Council local authority area comprises existing buildings, planning permissions and buildings under construction ranging in size from 6,747m^2 to 60,759 m^2 and where in excess of 60% of the scheme has accommodated requirements extending to 25,000m^2 or more.

The need for forward planning to attract large-scale occupiers with significant employment capacity to County Kildare will require for additional lands to be rezoned for industrial purposes. Lands adjoining other serviced lands with connectivity to existing major road networks are clearly deemed optimal for rezoning.

Similarly, an analysis of the most recent South Dublin County Council local authority development plan 2016-2022 clearly shows that the vast majority of land zoned as *Objective EE – "To provide for Enterprise & Employment related uses,* which is largely concentrated to the north and south of Baldonnell in the South West of the local authority area, has also been fully utilised in the period since 2016. Large tracts of land in local authority ownership as well as some privately owned land has been sold to potential occupiers in the last five-year period. Many of the resulting buildings have comprised data centres and large logistics facilities which were 'built to suit' various multinational occupiers, some of whom have acquired additional land in the area to facilitate future expansion. An increase in the absorption of modern industrial accommodation and the sale of land to accommodate the development of data centres and other large facilities has severely compromised supply.

In addition to shortages of zoned land, there are severe shortages of modern buildings along the N7 road corridor at present. According to CBRE Research, several existing industrial estates have virtually no vacancy at this juncture, while new facilities have been let before practical completion and in some cases while still at planning stage, such is the volume of demand for modern facilities in this location. CBRE Research has identified only 88 acres of land in the entire South Dublin County Council local authority area that is capable of development at this juncture. The shortage of both land and buildings in the South Dublin local authority area is further fuelling demand in locations such as Naas and Newbridge and copperfastens the need to zone additional lands in this location.

Conclusions & Recommendations

It is clear that by virtue of the large takes of accommodation and land that have occurred along the N7 corridor over the course of the lifetime of the previous development plan, that there is limited opportunity for new industrial and logistics occupiers, with no strategic landbanks remaining to facilitate the volume of development required over the next decade. In the Naas/Newbridge area, there is negligible vacancy within existing schemes and a severe shortage of zoned land to facilitate either existing or anticipated future requirements with only 151.2 acres within 5 sites available for development at this juncture. Furthermore, there are no zoned sites within the existing scheme capable of accommodating a requirement of 25,000m^2 or more.

One of the main drivers of demand for both land and buildings in the Naas/Newbridge area is that most of the land which was zoned for enterprise and employment use in the most recent South Dublin County Council plan is now accounted for and potential rezoning of older industrial estates in the area is also forcing displacement further down the N7 road corridor. The scarcity of land to accommodate new requirements within the South Dublin local authority area, coupled with significant road improvements along the M7 is encouraging several occupiers to consider moving further out to Kildare. However, this region is now also facing challenges in terms of the scarcity of zoned and serviced land to facilitate new development of the type and scale required by occupiers as well as a significant scarcity of available buildings.

Despite the strength of demand for industrial & logistics accommodation along the N7 corridor, which has only escalated as a result of the growth of Ecommerce and Brexit and is expected to remain strong over the course of the next decade, it would appear that there is little likelihood of considerable tracts of privately owned land in south West Dublin being rezoned to accommodate anticipated end-user demand in the period 2022-2028. This will in turn put additional pressure on Kildare County Council to rezone sufficient land in the Naas/Newbridge area to cater for some of this displacement. If sufficient land is zoned for enterprise and employment generating uses in the area, there will be potential to develop a range of different industrial typologies and sizes. This in turn will facilitate the attraction of a mix of end users that will create a higher volume of sustainable employment in the Kildare region.

Supply of modern industrial & logistics buildings and industrial zoned land in the Naas/Newbridge area is limited. There is limited vacancy and many of the older established industrial schemes in the county are likely to be rezoned for higher value uses in time. With the new development plan for the period 2023 - 2029 now being drafted, it is therefore timely to rezone additional lands for NE1 – Industry & Warehousing uses to enable Kildare County Council to maximise the opportunity and capitalise on the inherent demand in the market. If insufficient land is zoned for industrial use, it will inevitably lead to displacement to other locations, as has been the experience in South Dublin of late.

We understand that several of the existing occupiers within the Naas Enterprise Park scheme aspire to expand their operations over the next five years and would clearly have a preference to remain within this scheme if possible. Indeed, we believe that Penney's (Primark) recently made the decision to vacate the scheme and develop a bespoke distribution centre elsewhere in Kildare due to insufficient land being zoned for industrial use within this scheme. Similarly, DSV who are currently based in Naas Enterprise Park, have a requirement for more than 40,000 square metres. This occupier would prefer to remain within the park or its environs but will be forced to relocate elsewhere if this growth cannot be accommodated within the park.

Taking all of our findings into account, the rezoning of c.60 acres of unzoned land at Naas Enterprise Park for NE1 – Industry & Warehousing use is therefore strongly recommended on the basis that this land is:

- *immediately adjacent to the already established business park which houses several occupiers with aspirations to grow their footprint within the scheme but who may be forced to relocate elsewhere if sufficient zoned and serviced land is not available;*
- *easily accessible using the existing road infrastructure;*
- *greenfield land which can be developed quite quickly once zoned and planning has been secured;*
- *not in close proximity to existing residential development and*
- *fully serviced*

Considering the economic, demographic, and socioeconomic factors at play, the demand for industrial & logistics accommodation along the N7 road corridor is going to continue to escalate over the coming years. Local authorities including South Dublin County Council and Kildare County Council need to be mindful of this structural shift and zone sufficient lands now to enable their local authority areas to be in a position to capitalise on the inevitable opportunity and job creation potential. There is clearly a need to have sufficient land zoned to facilitate growth over the lifetime of the new development plan.

Marie Hunt
Executive Director, CBRE Ireland

Giacomo Mastantuono
Green Urban Logistics DevCo Limited
32 Molesworth Street
DUBLIN 2

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31 March 2022

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ISO 14001:2015
ISO 27001:2013
ISO 45001:2018

Dear Mr Mastantuono,

Draft County Development Plan 2023-2029 Submission - Flooding and surface water management

Following your recent correspondence, we understand that you require input into a rezoning submission to the Draft Kildare County Development Plan (CDP) 2023-2029, in relation to the Naas Enterprise Park. You have requested support in relation to the flooding constraints to the site.

JBA Consulting

JBA is an ISO 9001:2015 registered water and environmental consultancy employing over 500 staff in 15 offices in Ireland and the UK. Our client base is wide, from both the private and public sectors, and includes the European Investment Bank, Office of Public Works (OPW), Department of Heritage Environment and Local Government (DOEHLG), Environmental Protection Agency (EPA), City and County Councils and numerous European bodies and agencies. JBA has completed a wide range of projects, from national scale to local planning authority scale, which demonstrate our expertise in flood risk management and strategic planning policy and practice.

JBA Consulting were the lead authors of the document, 'The Planning System and Flood Risk Management: Guidelines for Planning Authorities' (November 2009). The guidance document for planners, engineers and developers that will ensure that flood risk will be fully considered during the development plan making stage and also in the design of the built environment in flood risk areas. More importantly, the guidance reinforces current thinking in flood risk management, whereby alternative approaches which do not rely on traditional structural solutions are considered. The guidance is drawn from a thorough understanding of the Irish planning system, development pressures and expectations, and the need to introduce a managed approach to flood risk that will assist in the delivery of the EU Floods Directive. The principles of the Planning Guidelines are incorporated into JBA's wider work through catchment scale studies, strategic flood risk assessments at county and master planning scale, and site specific flood risk assessments.

Naas Enterprise Park and flood risk

The approach to flood management at both plan making and development management stages of the planning process is laid out in the document “The Planning System and Flood Risk Management: Guidelines for Planning Authorities (2009)” (the Planning Guidelines). It is to this document that the following assessment refers.

The draft Kildare CDP 2023-2029 is supported by a Strategic Flood Risk Assessment (SFRA). In the CDP, the enterprise park is zoned for 'Objective H3: Industry / Warehousing' on the Ladytown and Environs settlement mapping. Under the Planning Guidelines, this is considered to be a less vulnerable use and is therefore appropriate in Flood Zone B without the need to carry out either a Plan Making or Development Management Justification Test. Lands surrounding the enterprise park are zoned 'Objective I – Agriculture'.

In the CDP, certain areas within the enterprise park are highlighted as requiring a flood risk assessment. Examination of the supporting SFRA and publicly available information on the sources of flooding, such as the OPW website www.floodmaps.ie, the EPA rivers network and historical flood information does not provide a correlation between the areas marked as flood risk and watercourses in the locale. The SFRA reports *'The PFRA [OPW's Preliminary Flood Risk Assessment] mapping highlights clusters of pluvial risk within the business park. Surface water and drainage should be addressed in SSFRAs.*' It goes on to state that '*There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC Draft CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk*.'

The flood risk indicated in the CDP is therefore confirmed to arise from pluvial sources. The origin of the flood information is PFRA, which is a broadscale and highly indicative dataset. It was derived by the OPW as a screening tool using a coarse resolution digital terrain model which does not reflect local detail in the ground profile, or features such as roads, kerbs, gullies and walls which in reality would direct and divert surface water. It is likely that the risk indicated is caused by localised depressions that are represented in the digital terrain model and may not be representative of ground conditions and profiles on site. It should also be noted that, prior to the publication of the draft CDP, the OPW have withdrawn the PFRA from public display and usage.

Pluvial flood risk does not contribute to the generation of Flood Zones and so does not influence the need for the Justification Test, as confirmed by the SFRA. Under the Planning Guidelines, this means the enterprise park and surrounding lands are in Flood Zone C and appropriate for all forms of development, subject to the preparation of a land use strategy and detailed proposals for surface water management as part of the assessment. The SFRA also provides details of the approach to be taken to surface water management and drainage (Section 4.3 of the Draft SFRA). On this point, JBA are in agreement that an assessment of flood risk is required for any and all development, either in the existing park area or in the expansion areas. This is in accordance with best practice guidance and does not place a particular restriction on the form and usage of the potential development.

Therefore, as part of the detailed design of the enterprise park expansion, an assessment of surface water mechanisms and risks to the existing enterprise park and the expansion areas will be undertaken, and the design of the surface water drainage system carried out as appropriate. This will take into account best practice and the guidance referenced in the CDP, including the use of sustainable drainage systems. It is noted that there are a number of drainage channels in proximity to the existing development area, particularly to the south-west. The development design will be cognisant of these, proposing a suitable approach to either divert, attenuate or otherwise respond to ensure no increase in run-off rates and volumes, and no increase in flood risk to neighbouring lands of the existing development. Importantly, climate change allowances will be an important factor in the

calculation and design of the systems to future proof the development as far as practicable.

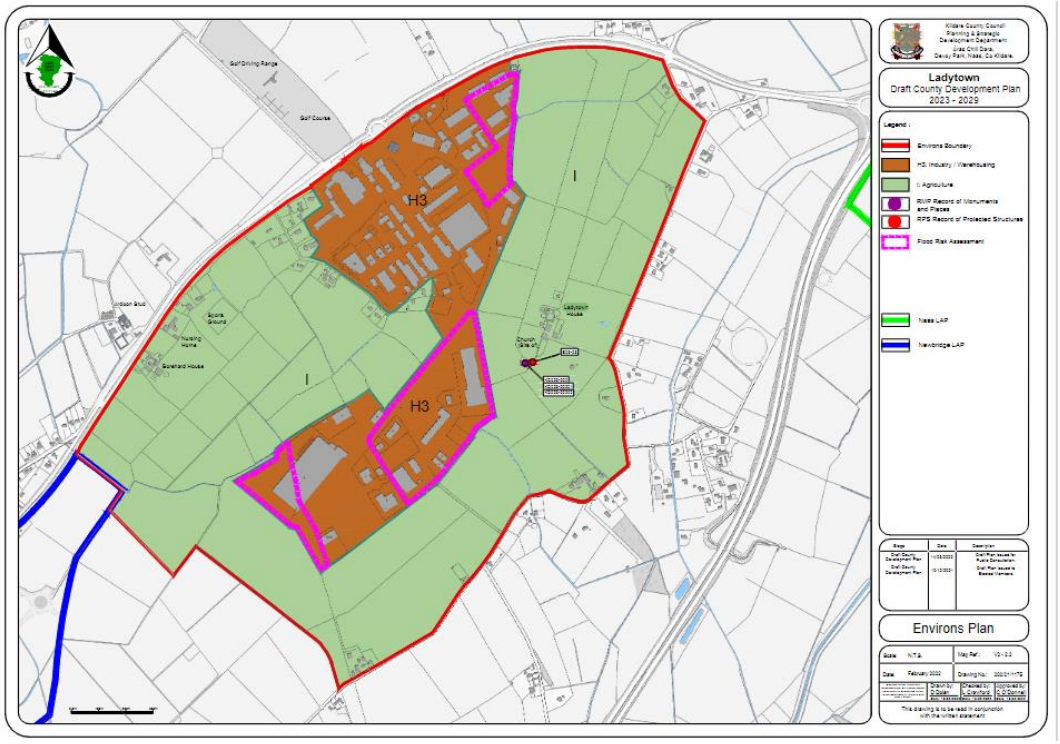


Image extracted from Kildare County Development Plan 2023-2029 Volume 2 Map V2 2-2

It is therefore concluded that the proposed expansion of the Naas Enterprise Park can be carried out in a manner which is in accordance with the Planning System and Flood Risk Management Guidelines and it is appropriate to rezone portions of the I - Agriculture zoning to H3 – Industry / Warehousing. That the fact the need for a flood risk assessment has been highlighted in the Draft Kildare County Development Plan 2023-2029 is commended and is in line with best practice in the management of all sources of flooding, even though the enterprise park and surrounding lands are in Flood Zone C and therefore appropriate for all forms of development. The detailed design of the expansion area will include reference to the latest guidance on surface water management and SUDS and will ensure no increase in flood risk to the existing development or surrounding lands and may provide opportunities to provide supplementary flood mitigation to parts of the existing park which may be vulnerable to surface water ponding currently or under climate change conditions.

Yours sincerely,

Elizabeth Russell
Associate Director
elizabeth.russell@jbaconsulting.ie

NAAS ENTERPRISE PARK

PALM LOGISTICS

February 2022

PALM LOGISTICS

Executive Summary

- Palm Logistics (Palm) is a real estate investment firm with a property portfolio of approx. 5 million sq ft, over half of which is in Ireland and includes Naas Enterprise Park.

- Naas Enterprise Park extends to over 1,200,000 sq ft and approximately 2,000 people are employed there. Occupiers include DSV, Penney's, Mercury Engineering, DHL, Domino's Pizza & Screwfix.

- Palm are currently working with a best in class design team to transform the park into the premier logistics park in Ireland, focusing on place-making, connectivity, enhanced public realm and sustainability.

- As part of the park transformation, Palm intends to expand the park to provide both expansion space for existing occupiers and create new employment to the locality.

Introduction - Palm Logistics

PALM LOGISTICS

Palm Logistics (an affiliate of Palm Capital, Palm) is a dedicated logistics company with operations and offices in Dublin, London and Madrid.

Palm Logistics operates in the office and logistics sectors with a property portfolio of approx. 5,000,000 sq ft, half of which is located in Ireland. The company, together with institutional investor KKR, purchased Naas Enterprise Park in December 2021.

With a dedicated Irish based team, Ireland is a key market for Palm Logistics. Palm Logistics' first development in Ireland was Greenogue Logistics Park, a 450,000 sq ft (100m GDV) development of LEED Silver sustainable logistics space. (https://www.greenoguelogisticspark.com)

Palm have attracted two leading companies to this development; creating significant employment in the locality. Building 2 Greenogue Logistics Park, extending to 287,000 sq ft, is the largest speculative warehouse ever built in Ireland. It has just completed and is now available to let.

Outside of Ireland, Palm have developed Los Gavilanes, a best in class logistics park in Madrid comprising 1,250,000 sq ft of sustainable LEED Silver and Gold warehouses, attracting tenants such as Amazon, Carrefour, Arrival, MCR and Talentum (leading spanish logistics company). Additionally, they have successfully repositioned a 310,000 sq. ft. airside logistics facility in Copenhagen let to institutional tenants such as DHL, PostNord and Worldwide Flight Services (WFS).

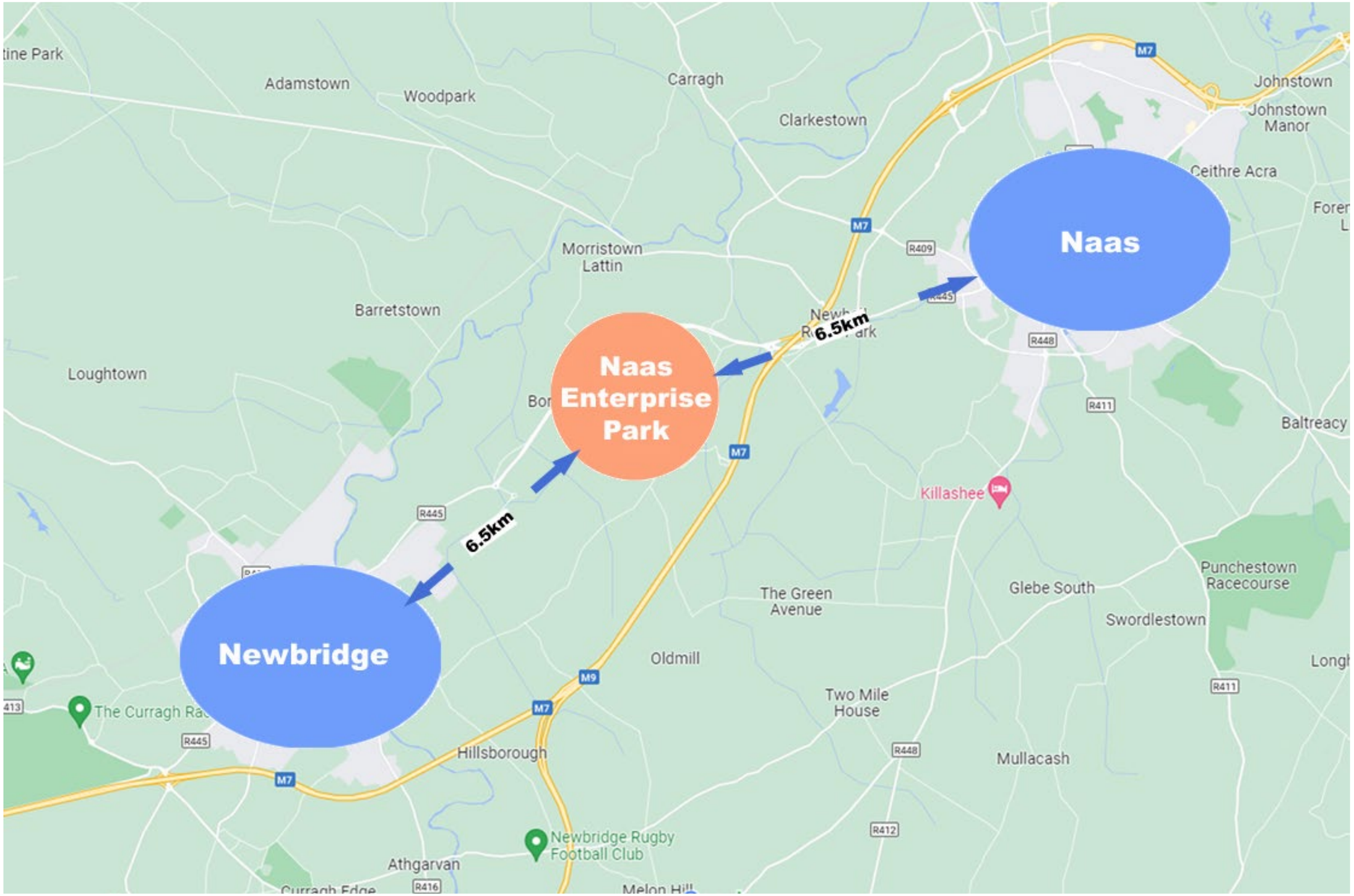
By focusing on place-making, connectivity, enhanced public realm and sustainability it is Palm Logistics' vision to transform Naas Enterprise Park into the premier logistics park in Ireland, mirroring best in class European logistics parks. We aim to create an attractive working environment for the existing tenants and attract new companies to Kildare.

Palm have a long term and positive view on Irish logistics and Naas Enterprise Park, have already invested heavily into the sector and will continue to do so over the coming years.

http://www.palm-capital.com

Building 2, Greenogue Logistics Park, Dublin

Unit 3, Phase 1, Los Gavilanes, Madrid


Adamstown
Woodpark
Carragh
Clarkestown
Johnstown
Johnstown Manor
Ceithre Acra
Morristown Lattin
Barretstown
Loughtown
Naas
Naas Enterprise Park
6.5km
6.5km
Newbridge
Killashee
The Green Avenue
Glebe South
Punchestown Racecourse
Swordlestown
Oldmill
Two Mile House
Mullacash
Hillsborough
Newbridge Rugby Football Club
Athgarvan
Baltreacy
M7
M9
R409
R445
R448
R411
R412
R416

Our Vision for Naas Enterprise Park

Market Leading Business Park

Improved Site Amenity

Enhanced connectivity / infrastructure

Leading sustainability credentials

An attractive workplace

Major landscape intervention

Enhanced public realm

Improved community environment

ESG Principles

Existing Uses Distribution

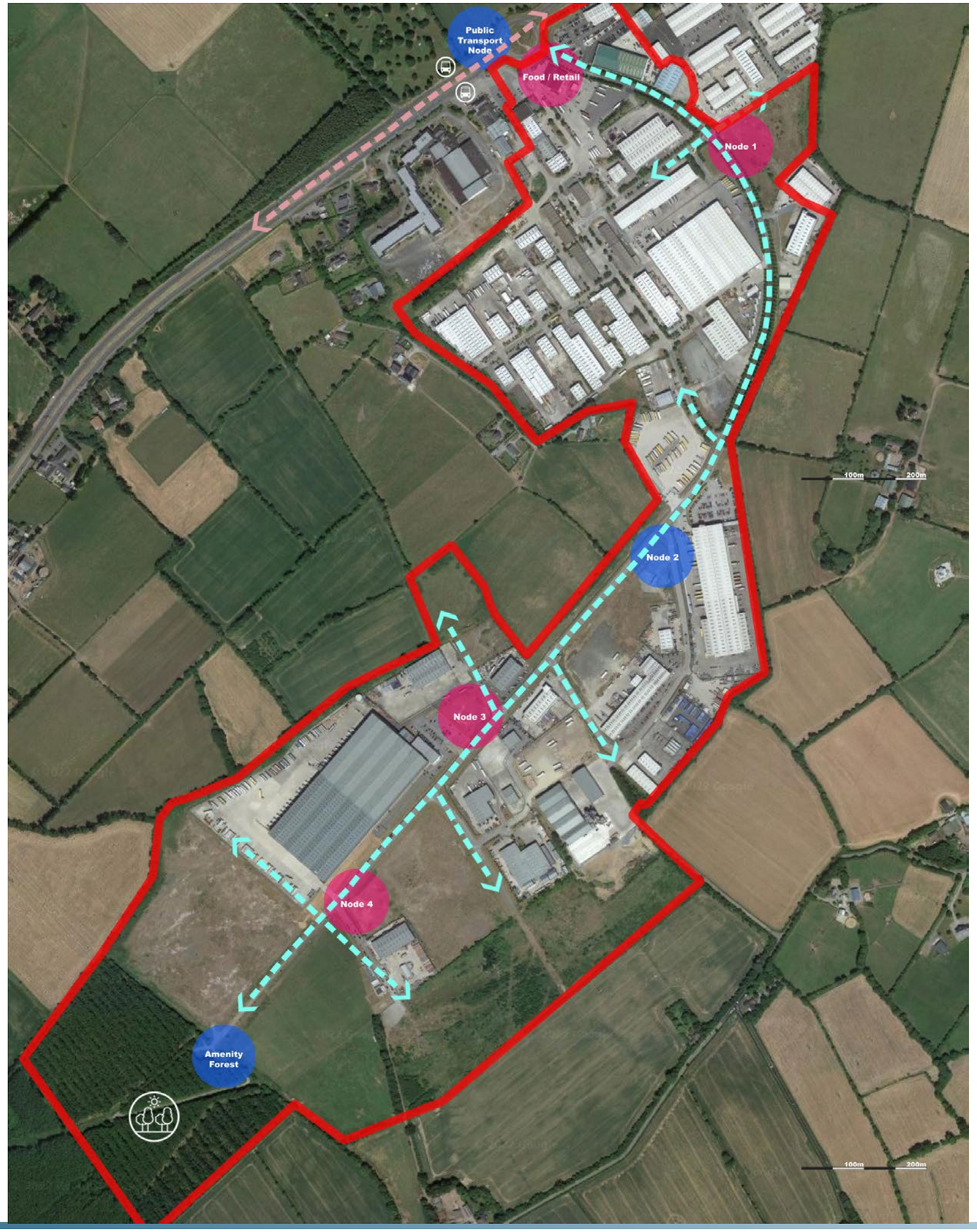
‘Zone 1’, the northern portion of the site closest to entrance, has a particular character with many smaller ‘local business’ units as well as some medium to large scale warehouses.

In addition, Zone 1 also has some retail and food offers close to the roundabout which serve the wider area.

‘Zone 2’ generally has medium to larger scale units than Zone 1.

The overall impression of the park is that it is a vehicle dominated environment and that orientation within it can be difficult.

There are opportunities to improve this through place making and landscaping.



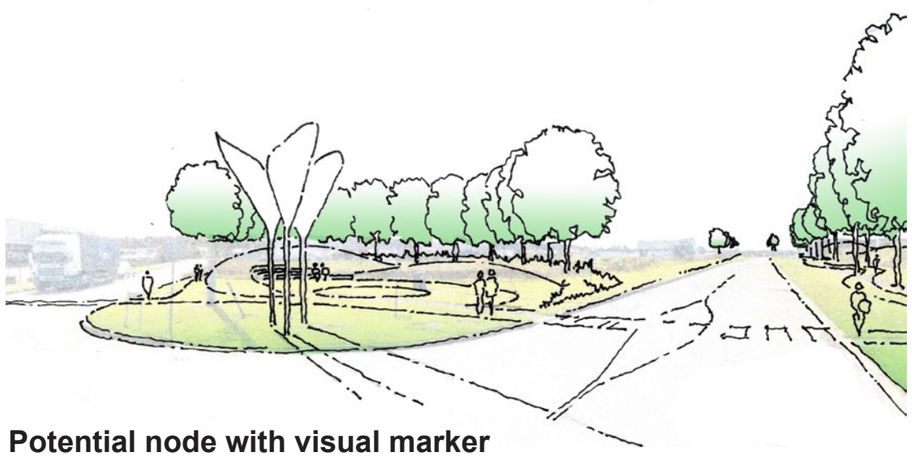
Vehicles - Orientation & Markers

PRIMARY VEHICLE CIRCULATION

NODES

- potential for vertical orientation markers wayfinding & identity

Accentuating certain ‘nodes’ along the primary circulation route could provide improved orientation and way finding and present opportunities for place making and interaction.



Potential node with visual marker

Green Amenity Spine

EXISTING LANDSCAPE INTERVENTIONS TO CREATE GREEN AMENITY SPINE

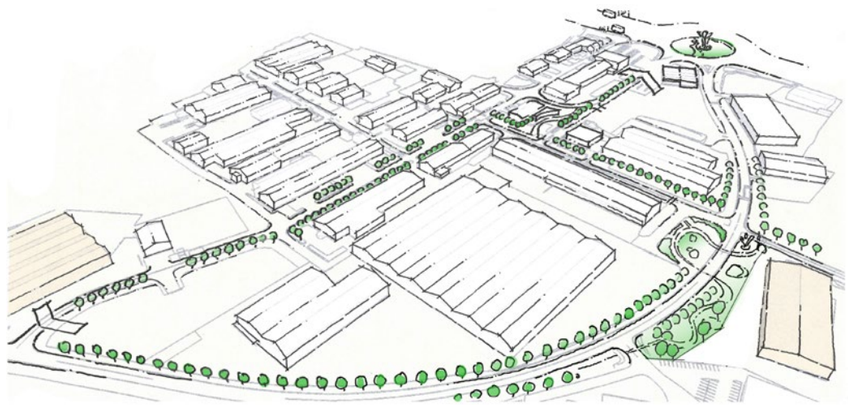
MAJOR LANDSCAPE INTERVENTIONS TO CREATE GREEN AMENITY NODE

NODES

- potential places along green spine with amenity, leisure & biodiversity function

The proposal will create a landscaped green spine from the entrance roundabout along the primary circulation route, to the bottom of the site.

The nodes which are located along this route will also utilise landscape as a major element in place making and orientation.



Green ‘spine’ to link landscaping elements and nodes throughout the site

Potential Ideas for Nodes

Landscape

Sitting

Coffee / Cafe

Orientation / Visual Marker

Exercise

Environment

Community

Meeting Point

Wellness

Pavilion building

Visual marker

Coffee Truck

Visual Marker / Shelter

Meeting point

Water feature

Fitness area

Pavilion building

Wildflower area

Naas Enterprise Park, Newhall, Naas: Transport Submission

For Palm Logistics

TRANSPORT INSIGHTS

Final Submission

May 2022

Document Control

Contract Name	Palm Logistics
Contract Number	C801 2022
Document Type	Transport Submission
Document Status	Final
Primary Author(s)	Cillian O'Reilly
Other Author(s)	Sean Byron
Reviewer(s)	Eoin Munn

Document Review

Item No.	Item Description	Reviewer Initials	Review Date
1	Working Draft Submission v1.1	EM	28/03/2022
2	Draft Submission v1.3	COR/EM	03/05/2022
3	Final Submission v1.5	EM	20/05/2022
4			
5			
6			
7			
8			

Distribution

Item No.	Item Description	Approvers Initials	Date
1	Working Draft Submission v1.2	EM	28/03/2022
2	Draft Submission v1.4	EM	06/05/2022
3	Final Submission v1.6	EM	20/05/2022
4			
5			

Table of Contents

Appendix

1. Introduction

1.1. Overview

Transport Insights has been commissioned by Brock McClure Planning and Development Consultants on behalf of Palm Logistics to prepare a Transport Submission in support of the proposed rezoning of land at Naas Enterprise Park. This Transport Submission (henceforth referred to as the Submission) forms part of an overall submission to Kildare County Council (KCC) as part of Stage 2 of the Draft Kildare County Development Plan 2023-2029 (KCDP) consultation process.

This Submission will present the transport case in support of the proposal to rezone an area of land, ca. 22.86 hectares to the west of the existing Nass Enterprise Park (NEP). The potential transport impact of rezoning the portion of land on the surrounding road network is detailed as are existing and proposed sustainable travel infrastructure/ facilities for walking, cycling and public transport.

1.2. Site Location and Overview of Proposed Rezoning

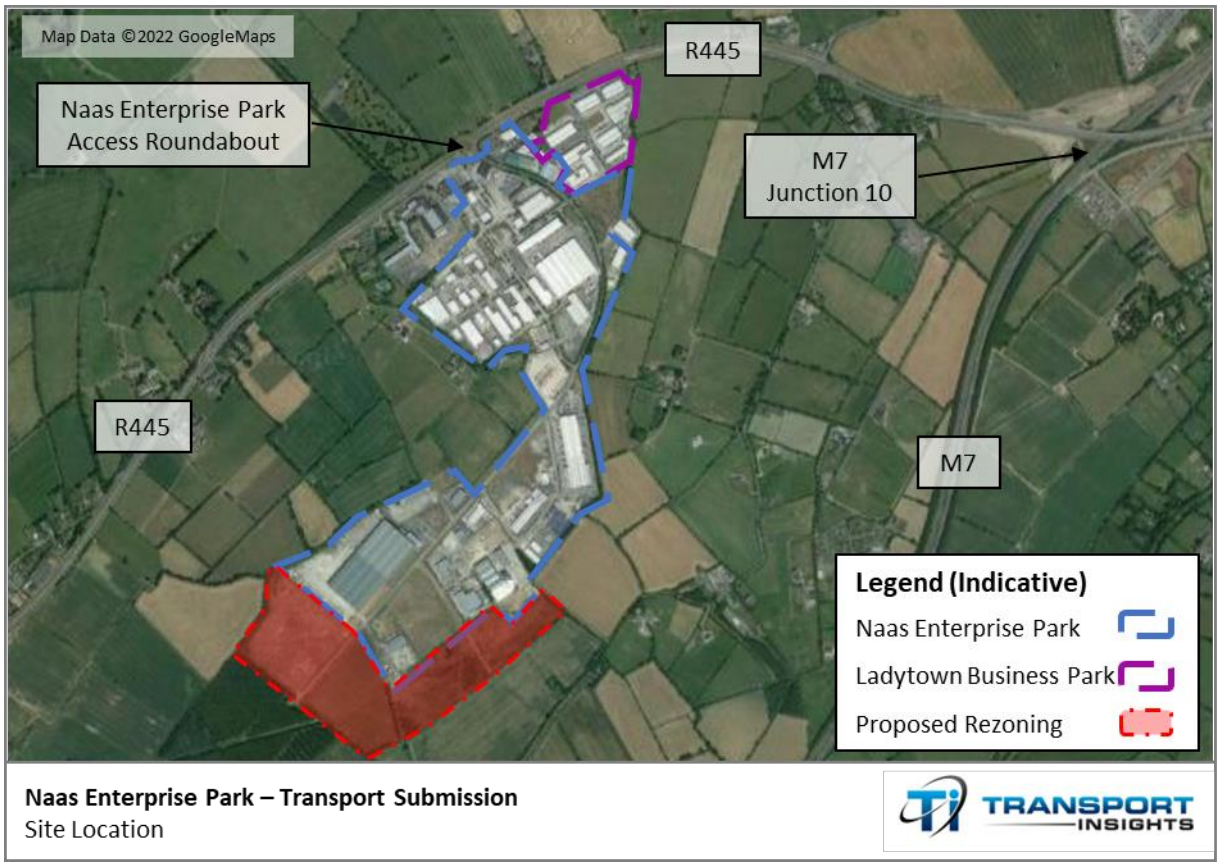
Site Location

Figure 1.1 (overleaf) illustrates the NEP and the area of land to the west which is promoted for rezoning. The figure also illustrates the NEP location in context to the surrounding area and key road infrastructure within its immediate vicinity. As can be seen from this figure, the Ladytown Business Park is located adjacent to the north eastern corner of the NEP. The figure also illustrates the NEP is located to the south and east of the R445. The M7 motorway runs to the east of the NEP, with access to the motorway available at the recently upgraded M7 Junction 10 (via the R445) to the northeast. The areas surrounding the NEP is predominately farming land.

Overview of Proposed Area for Rezoning

The proposed area being promoted for rezoning is located to the west of the existing NEP and would form a natural western extension. In total, ca. 22.86 hectares of land is being promoted for rezoning. The rezoned land would be expected to facilitate industrial, warehousing and logistics type developments, similar to a number of existing plots at the NEP. Access to the lands is proposed to be facilitated by an extension of Lime Drive, the main vehicular access serving the existing NEP. Lime Drive connects with the R445 via a three-arm roundabout along the northern boundary of the NEP.

Figure 1.1 Site Location Plan



1.3. Submission Structure

The remainder of this Submission is structured as follows:

- **Section 2** provides an overview of the relevant national and local policy and guidance documents;
- **Section 3** describes the proposed rezoning's receiving environment;
- **Section 4** presents an overview of the development potential of the rezoned lands, sets out potential traffic generation of the rezoned land and the potential impact on the local road network; and
- **Section 5** provides an overall summary and conclusion.

2. Policy and Guidance Review

2.1. Introduction

This section of the Submission summarises national, regional and local policy and guidance of relevance to the proposed rezoning of land adjacent to the NEP.

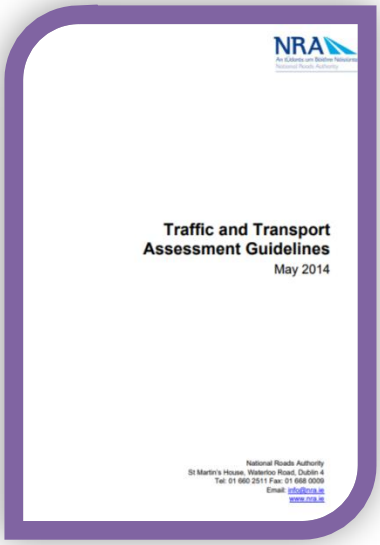
2.2. National Guidance

National Development Plan 2021-2030

The National Development Plan (NDP) 2021-2030 sets out Government's over-arching "*investment strategy and budget for the period 2021-2030*" to help deliver investment and infrastructure across Ireland to enable Project Ireland 2040. The NDP notes continued investment in sustainable transport infrastructure and services to enhance regional accessibility by all modes. The regional and commuter bus fleet will continue to see investment over the lifetime of the Plan with new vehicles to replace old vehicles and enable increased services and additional services. Investment in infrastructure to support and enhance bus services is also provided for in the NDP, with continued investment in maintaining the existing road network and investment in upgrading bus stop infrastructure to encourage increased usage of inter-urban and regional bus services.

Traffic and Transport Assessment Guidelines (2014)

Transport Infrastructure Ireland's (TII) Traffic and Transport Assessment (TTA) Guidelines May 2014 provides guidelines for best practice in relation to the preparation of a TTA. In relation to the Assessment, it states:



> *"The Traffic and Transport Assessment should be written as an impartial assessment of the traffic impacts of a scheme and it should not be seen to be a "best case" promotion of the development. All impacts, whether positive or negative, should be recorded. The level of detail to be included within the report should be sufficient to enable an experienced practitioner to be able to follow all stages of the assessment process and to reach a similar set of results and conclusions."*

While this Submission is not intended to serve as a fully-fledged traffic and transport assessment of the potential rezoning of the lands, the content of this Submission is informed by TII's TTA guidelines.

2.3. Regional Policy

Eastern & Midland Regional Spatial & Economic Strategy (2019-2031)

The Regional Spatial & Economic Strategy (RSES) for the Eastern and Midlands regions sets out the context and vision for the development of the regions including county Kildare and identifies Naas as a key town. The RSES also recognises the strong links between Naas and nearby settlements of Sallins and Newbridge and the interrelated services, employment and education facilities of the three settlements and linkage between. The RSES seeks to encourage economic and employment growth supported by the provision of an improved transport network in the region including improved public transport services/ infrastructure, and Park and Ride facilities serving Naas and surrounding areas.

Transport Strategy for the Greater Dublin Area 2016-2035 (2016)

The Transport Strategy for the Greater Dublin Area 2016-2035 was published by the National Transport Authority (NTA) in April 2016 and represents the key transport policy/ strategy document for the region. The Strategy provides a framework for the planning and delivery of transport infrastructure and services over the next two decades.

The Strategy notes express bus services should be provided to major towns in the Greater Dublin Aera hinterland, such as Naas, with an envisaged frequency of a bus every 30-minutes during peak hour travel periods. These services will regularly be reviewed by the NTA and relevant bus operators and amended when required to accommodate new development.

Draft Transport Strategy for the Greater Dublin Area 2022-2042

The Draft Transport Strategy for the Greater Dublin Area 2022-2042 was published by the National Transport Authority (NTA) in December 2021. The draft Transport Strategy will eventually replace the existing 2016 strategy document. The draft strategy identifies several major infrastructure projects for the Greater Dublin Area including the ongoing roll-out of cycle tracks and greenways, M7 Naas to Newbridge widening, Osberstown Interchange and Sallins Bypass and investment in bus priority and bus service improvements.

In terms of future rail capacity and services, the Draft Transport Strategy notes over "*the lifetime of the strategy, there will be a requirement to extend the DART+ programme to key locations... including on the Kildare Line to Naas/ Sallins*".

The Draft Transport Strategy identifies the N/M7 as a regional bus corridor and notes improvement measures on the national road network to facilitate efficient bus operations such as removing all direct uncontrolled access onto sections of the N7. it will deliver the removal of all direct uncontrolled access onto the N7 between

Leinster Orbital Route

As noted, the draft Transport Strategy identifies several major infrastructure projects for the Greater Dublin Area over the coming decades. Of particular relevance to the NEP is the Leinster Orbital Route which the draft Transport Strategy notes "*will not be progressed in its existing form*" instead investment will focus on localised improvements to the existing road network along the indicative route corridor. The Leinster Orbital Route was proposed to provide a new road link, creating an orbital route running from Drogheda in Co. Louth to the M7 to the south of Naas in Co. Kildare. The indicative route of the orbital road would have seen a new connection to the M7 motorway located in proximity to the NEP. Given the policy position at national, regional and local levels, the Orbital Route (in its current format) is no longer seen as a potential consideration for the further development of the NEP. Also, it is noted that the Draft Kildare County Development Plan does not include reference to the Leinster Orbital Route, reflecting the fact it is not expected to be progressed.

Greater Dublin Area Cycle Network Plan

The Greater Dublin Area Cycle Network Plan was published by the NTA in December 2013 and sets out proposals to develop a cycle network within the region. It proposes a comprehensive and integrated network of infrastructure comprising primary, secondary, greenway and inter-urban components.

The proposed network within the vicinity of the NEP is described within Section 3.7 of this Submission, demonstrating NEP is ideally located to benefit from planned high-quality cycling infrastructure along the R445, providing a link between the NEP, Naas and Newbridge.

The Draft Transport Strategy for the Greater Dublin Area also seeks to review and update the Cycle Network Plan from 2013. The Draft Transport Strategy continues to designate the R445 as part of the cycle network, categorising it as a Secondary Route.

2.4. Local Policy

Kildare County Development Plan 2017-2023

The Kildare *County Council Development Plan 2017-2023* provides the overarching planning framework for development in the Kildare administrative area until 2023. Chapter 6 of the *County Development Plan* details Movement and Transport. Of primary importance from a traffic and transportation perspective are sustainable travel accessibility and maintaining and managing demand on the road network. Policies and objectives of note include:

- **MT 2**: *"Support sustainable modes of transport by spatially arranging activities around existing and planned high quality public transport systems."*
- **MT 7** *"Focus on improvements to the national, regional and local network that provide additional capacity in order to reduce congestion and provide for current and future demand."*

- **MT 8** *"Seek to address urban congestion with particular emphasis on facilitating improved bus transport movement and reliability and improved links to bus and railway stations."*
- **POT 3:** "*Support the delivery of the NTAs Greater Dublin Area Transport Strategy (2016-2035) in Kildare."*
- **POT 7:** *"Promote and support the upgrading of, the Maynooth rail line and the Kildare rail line, in accordance with the Transport Strategy for the Greater Dublin Area 2016-2035 and in co-operation with the NTA."*
- **WC 2:** *"Promote the development of safe and convenient walking and cycling routes."*
- **RS 1:** *"Ensure ongoing competitiveness and the efficient movement of people and goods in the county through the improvement and expansion of the road and street network within the county to support economic development and provide access to existing communities, new communities, employment areas and development."*
- **MO 3:** *Complete the upgrade and improvement of the M7 Newhall Interchange (Junction 10) and preserve that area free from development."*

Draft Kildare County Development Plan 2023-2029

The Draft Kildare *County Council Development Plan 2023-2019* was put on public display by KCC in early March 2022 until the 24th of May 2022. Submissions on the Draft County Development Plan can be made to KCC during this period. As noted, this Submission is part of an overall submission promoting the rezoning of land at the NEP.

The Draft plan seeks to build on the sustainable transport measures and initiatives set out in the existing *Kildare County Development Plan (2017-2023)* and ensure integration with updated regional and national policies such as the NTA's draft Greater Dublin Area Transport Strategy. Transport policies and objectives of note include (but are not limited to):

- **TM P1: "***Promote sustainable development through facilitating movement to, from, and within the County that is accessible to all and prioritises walking, cycling and public transport.***"**
- **TM 09: "***Facilitate and secure the delivery/implementation of the public transport projects that relate to County Kildare as identified within the Integrated Implementation Plan (2019-2024), (or any superseding document), including the DART+ programme (Including DART+ West and DART+ South West), BusConnects and the light rail investments."*
- **TM 037: "***Liaise with and encourage transport providers and other agencies (e.g. NTA, developers etc.) to improve bus transport movement and reliability, to ensure pick up points are clearly identifiable (particularly in rural areas), to provide appropriate bus shelters, to provide real time information panels at bus stops and to integrate the timetabling of bus and rail services*."

- **TM P4:** "Ensure ongoing competitiveness and the efficient movement of people and goods in the county through the improvement and expansion of the road and street network within the county to support economic development and provide access to new and existing communities, employment areas and development, all while prioritising sustainable modes of transport."

3. Site Context

3.1. Introduction

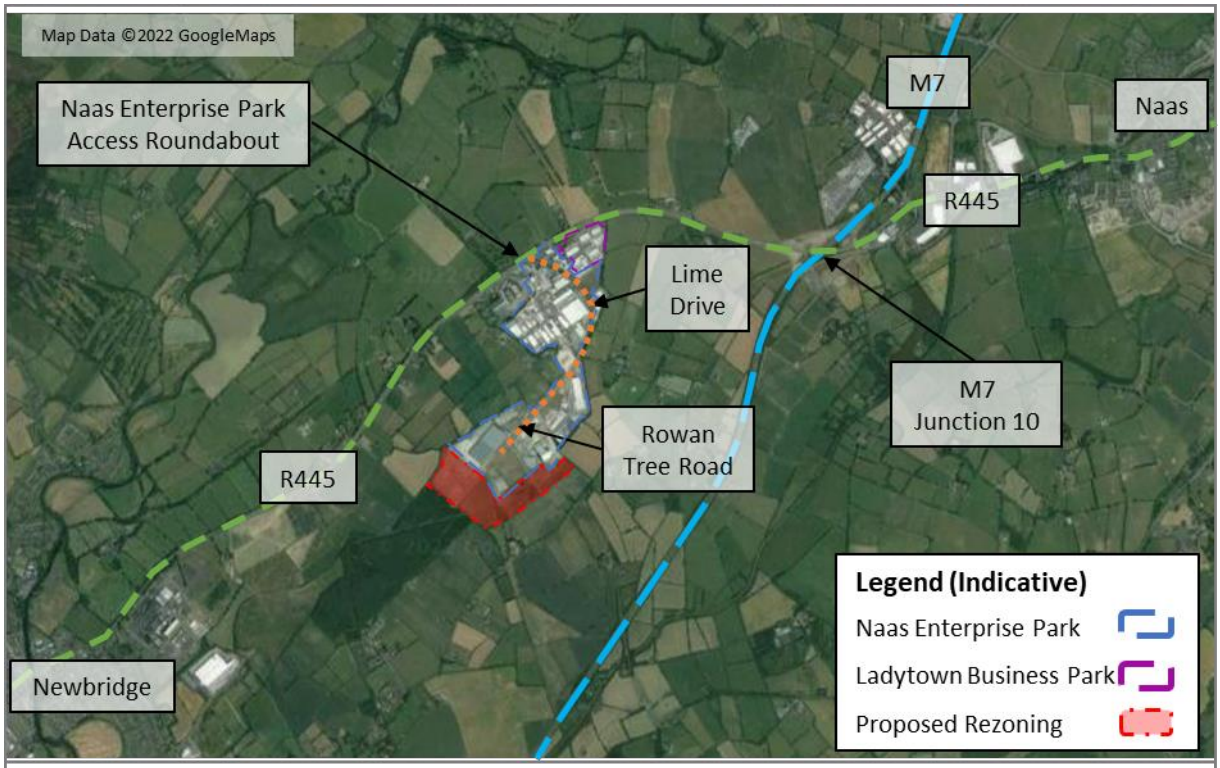
This section of the Submission describes the existing site, current accessibility arrangements for pedestrians, cyclists and public transport users and the local road network. The existing conditions presented here represents an evidence-based review, and have been informed by:

- a desktop review of the study area and its surrounding transport network, including general traffic road infrastructure, facilities for pedestrians and cyclists and public transport infrastructure and service provision; and
- a classified junction turning count survey of the R445/ Lime Drive roundabout junction.

3.2. Site Location, Access and Internal Layout

The NEP and the area of land considered for rezoning are situated about halfway between Naas (to the east) and Newbridge (to the southwest). The NEP is accessed directly off the R445 which forms the northern boundary of the NEP. The Ladytown Business Park is located adjacent to the north eastern boundary of the NEP. To the east and south the NEP is mainly bounded by farmland with a small number of residential uses. The following Figure 3.1 illustrates the NEP, the surrounding area and main access arrangements.

Figure 3.1 Site Location



Lime Drive and Rowan Tree Road provide the main vehicular route through the NEP and also provide access to Ladytown Business Park. The route is purpose built to serve industrial/ warehousing type development. The vehicular route runs from the R445 roundabout towards the north of the NEP, curving through the enterprise park on a north-east-south axis, terminating within the NEP. This route also provides pedestrian access from the R445 through the enterprise park. A secondary vehicular access route from the R445 roundabout into the NEP is also possible through the petrol station/ services car park.

NEP provides an enterprise park housing mainly industrial, warehousing and logistical use types as well as car dealerships, engineering firms, some retail and leisure units. NEP currently has ca. 80 occupiers in units (about 90% of available units are occupied) of varying size. A sample of current occupiers includes Domino's, DSV, Mercury Engineering, Schlotter, MSR Intel, JZ Flowers and Penneys.

3.3. Pedestrian and Cycle Provision

Pedestrian Accessibility and Infrastructure

As noted in Section 3.2, Lime Drive and Rowan Tree Road provide the main pedestrian access to NEP. The footpath initially starts adjacent to the petrol station and runs for ca. 50-metres along the western side of Lime Drive before swapping to the eastern side of Lime Drive by means of an uncontrolled pedestrian crossing with island refuge. The footpath then swaps back to the western side of the carriageway ca. 750-metres to the south again by means of an uncontrolled pedestrian crossing. The footpath remains on this side of the carriageway until it terminates at the end of Rowan Tree Road. Along Rowan Tree Road there are 4 no. uncontrolled pedestrian crossing points, which link the main footpath with footpaths on side roads such as Elm Road, Pine Road and Alder Road.

The roads within the northern portion of NEP such as Beech Avenue and Willow Drive have footpath on both sides of the carriageway for the majority of their length. Maple Drive has an intermittent section of footpath along its length.

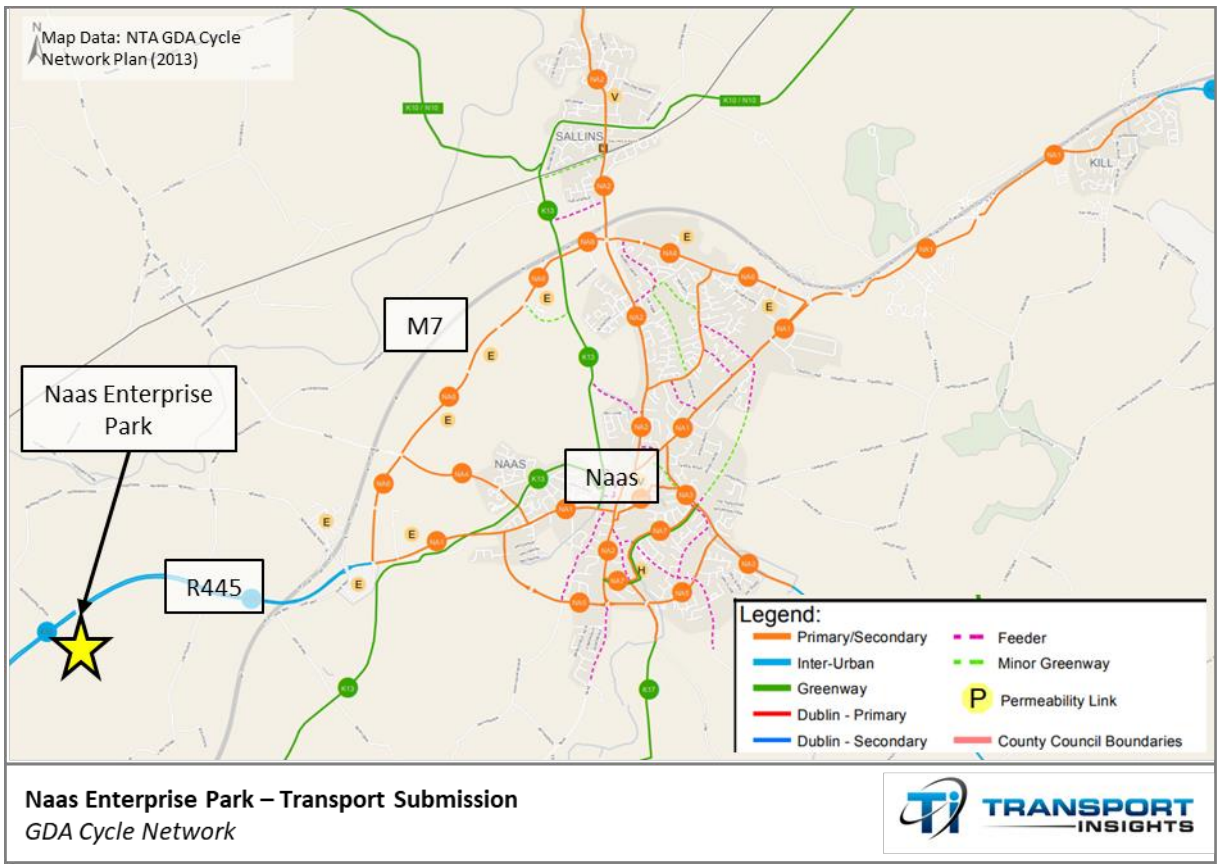
There is currently no footpath provision along the R445. Given the R445 is a dual carriageway regional road its main function is to provide a high-capacity vehicular link between Naas, the M7 motorway and Newbridge.

Cycle Accessibility and Infrastructure

At present there is no dedicated cycling infrastructure within the NEP or along the R455 in the vicinity of the NEP. Nevertheless, roads within the NEP are subject to a 40km/ h speed limit and traffic calming measures (e.g. ramps). Such conditions could be conducive to cycling for confident cyclists.

While the R445 has no dedicated cycling infrastructure, it does have a hard shoulder that could be utilised by cyclists instead of having to use the main vehicle lanes. The Greater Dublin Area Cycle Network Plan, produced by the NTA (see Section 2.3 of this Submission) has designated the R445 as an Inter-Urban cycle route (since designated as a Secondary Route in the Draft Transport Strategy 2022-2042). The following Figure 3.2 illustrates the proposed network along the R445 in the vicinity of the NEP.

Figure 3.2 GDA Cycle Network



3.4. Public Transport

Existing Bus Services

Bus stops are present on the R445, ca. 100-150-metres to the southwest of the NEP access roundabout. The westbound stop is accessible by passing through the petrol station and Tougher's restaurant car park. The eastbound bus stop is on the opposite side of the carriageway, however, there is no dedicated pedestrian crossing facilities. Currently available services at these stops are presented in the Table 3.1 (overleaf).

Table 3.1 Current Public Transport Services in Application Site's Vicinity

Route No.	Route	Weekday Off-Peak Frequency	Average Weekday Peak Frequency
125	Newbridge-Naas-Dublin City-UCD	N/A	20-minutes*
126 (A, B, D, E, T, U, X)	Rathangan-Newbridge-Naas-Dublin City- DCU	30-minutes	15-25-minutes
726	Portlaoise – Dublin Airport	60-minutes	60-minutes
826	Monasterevin- Newbridge-Naas	60-minutes	45-minutes

*4 no. services per day (2 no. in AM and 2 no. in PM)

As detailed in Table 3.1, the bus stops on the R445 offer a number of connections to nearby towns Naas and Newbridge and also longer distance connections to Portlaoise, Dublin City and Dublin Airport. The available bus routes offer employees working within NEP a sustainable travel alternative to the private car.

As noted in Section 2, regional and local policy seeks to maintain and improve existing regional bus services. The Greater Dublin Area Transport Strategy for instance, recognises the N/M7 as an important regional bus corridor and seeks to improve the frequency and efficiency of bus services along the corridor over the lifetime of the strategy.

3.5. Local Road Network

Lime Drive/ Rowan Tree Road

Lime Drive and Rowan Tree Road provide the main vehicular access to NEP (and the Ladytown Business Park) from the R445 roundabout. Lime Drive is a single carriageway road that runs for ca. 880-metres from the R445 roundabout curving through the enterprise park on a north-east axis where it then becomes Rowan Tree Road. The carriageway is ca. 9.5-metres wide and suited to accommodating Heavy Goods Vehicle (HGV) traffic. An access control barrier is located ca. 250-metres from the R445 roundabout on Lime Drive (within the NEP). Lime Drive has a posted speed limit of 40kh/ h and traffic calming measures are also present along its length including speed ramps, 'Slow' road markings and rumble strips.

Rowan Tree Road is a continuation of Lime Drive, it runs for ca. 1-kilometre terminating at the western edge of NEP. A short section of the road beyond its junction with Elm Road was built but is currently closed off to traffic. Similarly, to Lime Drive, Rowan Tree Road has a posted speed limit of 40km/ h and a carriageway width of ca. 9.5-metres. Traffic calming measures are also presented on Rowan Tree Road.

R445 and R445/ NEP Site Access Roundabout

The R445 is a regional road linking Naas with the M7 motorway (Junction 10) and Newbridge before continuing west beyond Newbridge towards Kildare and Monasterevin. In the vicinity of NEP, the R445 is a dual carriageway with hard shoulder and landscaped median strip. The R445 has a posted speed limit of 80km/ h.

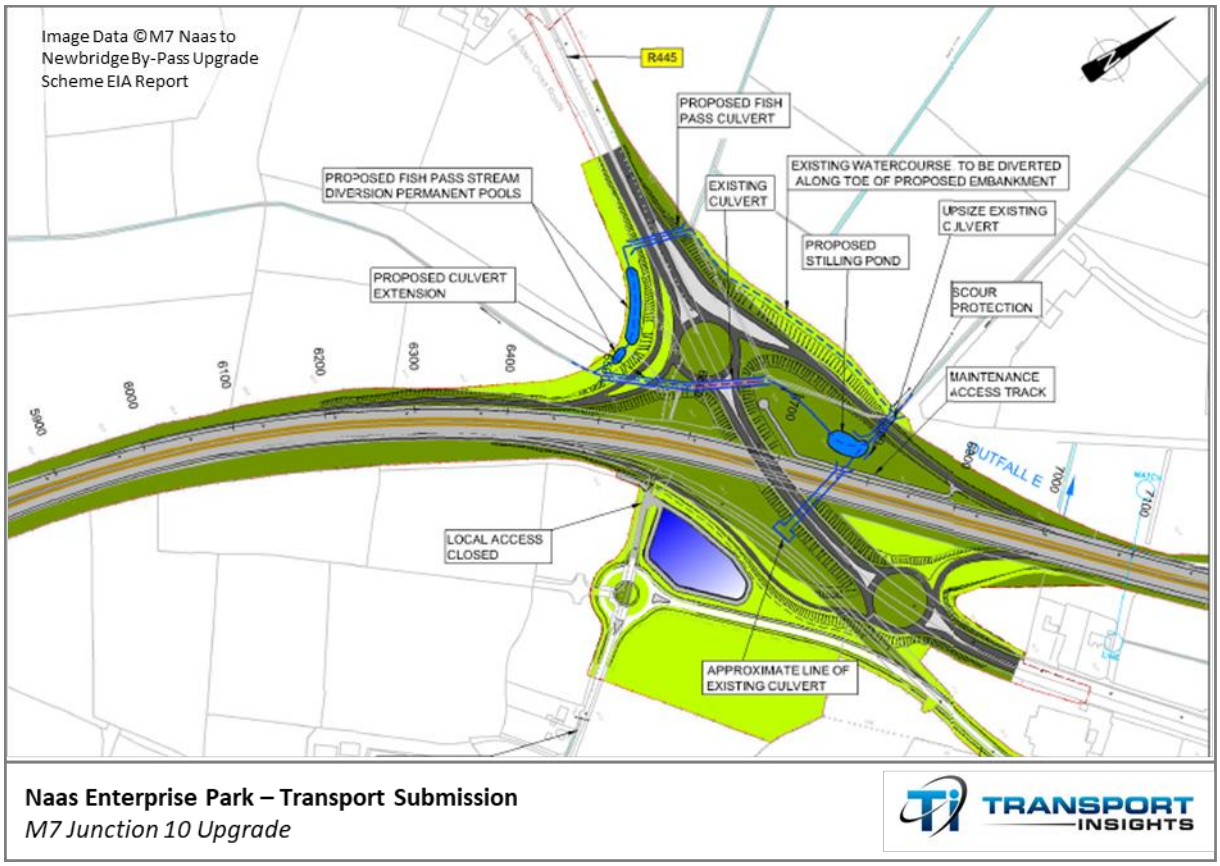
A 4-arm roundabout provides vehicular access to NEP from the R445. The R445 junction arms of the roundabout have two approach and two exit lanes. Whereas the NEP access arm and the petrol station access arms have a single entry and exit lane. The roundabout has an Inscribed Circle Diameter (ICD) of ca. 70 metres.

M7 Motorway and Improvement Scheme

The M7 motorway passes to the east of NEP and is accessible via the R445 at Junction 10 (Newhall Interchange). The M7 motorway provides a strategic connection west towards Limerick and northeast towards the N7, M50 and Dublin City. The M7 via the M8 also provides a strategic connection south towards Cork.

An upgrade scheme of a section of the M7 motorway between Junction 8 and Junction 11 was recently completed. The upgrade involved increasing the number of lanes on the M7 motorway from two to three lanes in both directions as well as upgrades to junctions along the route. Junction 10 which is located to the northeast of NEP underwent a significant upgrade to increase the capacity of the junction. The old junction interchange layout was deemed unable to accommodate revised traffic volumes once the third lane was added to the mainline carriageway of the M7 so a new junction was built to the west, linking directly with the R445. The new motorway interchange is a grade-separated Dumb-bell roundabout type motorway junction. The new junction enables a direct connection between the motorway on and off ramps with the R445 at roundabouts on either side. Figure 3.3 (overleaf) presents an extract from the Environmental Impact Assessment report which illustrates the new Junction 10 layout.

Figure 3.3 M7 Junction 10 Upgrade Layout*



* image courtesy of N7 Naas to Newbridge By-Pass Upgrade Scheme EIAR

Further commentary is provided in Section 4 regarding the potential impact of additional vehicle movements at Junction 10 as a result of the rezoned lands.

3.6. Traffic Survey Data Collection

To determine baseline traffic conditions at NEP, a classified junction turning count survey was undertaken at its vehicular access from the R445. The 12-hour survey was carried out on Tuesday 15th February 2022. The full survey results are contained in Appendix A.

Based on the survey results, the AM peak hour at the junction was identified to be 07:30-08:30hrs. The PM peak hour at the junction was identified to be 16:45-17:45hrs.

The results of the survey showing the number of Light Vehicles (LVs) and Heavy Vehicles (HVs) approach flows for the identified arm of the junction for the AM and PM peak hours are summarised in the Table 3.2 (overleaf).

Table 3.2 R445/ NEP Access Junction Survey Results – Approach Traffic Flows

Time Period	AM Peak Hour (07:30-08:30hrs)		PM Peak Hour (16:45-17:45hrs)	
	LVs	HVs	LVs	HVs
R445 Eastbound	796	100	637	58
Lime Drive	76	47	539	17
Crabapple Road	90	16	130	8
R445 Westbound	677	47	596	17
Total Approach Flows	1,639	210	1,902	100

As can be seen from the preceding Table 3.2, the R445 recorded the highest level of vehicle movements in both peak hours which would be expected given the road's strategic regional function. Recorded vehicle movements on Lime Drive and Crabapple Road were considerably less (excluding the PM peak hour) than those recorded on the R445. Lime Drive, the main vehicular access to NEP, recorded a total of 123 vehicle movements in the AM peak hour of which 47 or 38% were HVs. During the PM peak hour, a total of 556 vehicle movements were recorded of which 17 or 35 were HVs. The larger number of LVs recorded on Lime Drive during the PM peak hour would tend to indicate many employers within NEP finish/ shift change during the traditional PM peak network hours.

It is noted that all traffic associated with the existing development at NEP access the park via the R445/Naas Enterprise Park access roundabout, via Lime Drive and Crabapple Road. It is also noted that through-access can be made to/from the abovementioned roundabout to/from Lime Drive/Rowan Tree Road via Crabapple Road and Beech Avenue and while Lime Drive/Rowen Tree Road form a cul-de-sac end. In addition, access to Ladytown Business Park is taken from Lime Drive. Therefore, all traffic recorded on the Crabapple Road and Lime Drive arms of the access roundabout are associated with existing development at NEP and Ladytown Business Park.

3.7. Annual Average Daily Traffic (AADT) Conversion

To enable an assessment of the potential impact on the surrounding road network, as detailed further in Section 4, the surveyed vehicle movements were converted to AADTs. In accordance with TII's *Project Appraisal Guidelines for National Road Unit 16.1 – Expansion Factors for Short Period Traffic Counts* (October 2016), to derive AADTs from surveyed vehicle movements expansion factors are utilised to obtain the AADT value. The following Table 3.3 outlines the expansion factors used in expanding the survey data to AADT using data for the Mid East region.

Table 3.3 24-hour, WADT and AADT Factors

Variable	Day of Week	Month of Year
Survey Date	Tuesday	February
Factor	0.97 (WADT factor)	1.03 (AADT factor)

Based on the factors set out in Table 3.3 above two-way surveyed vehicle movements were converted to AADTs. Table 3.4 (overleaf) presents the AADT figures for the R445/ NEP site access junction.

Table 3.4 R445/ NEP Access Junction AADTs

Junction	AADT			
	Road Link	Total Vehicles	Of Which HGVs	% HGVs
R445/ Lime Drive/ Crabapple Road	R445 Eastbound	20,047	2,286	11%
	Lime Drive	8,263	1,347	16%
	Crabapple Road	3,035	281	9%
	R445 Westbound	15,595	1,140	7%

The date set out in Table 3.4 above is used in Section 4 as a baseline in order to assess the potential traffic impact of the proposed rezoned land on the surrounding road network.

4. Overview of Development and Traffic Impact Analysis

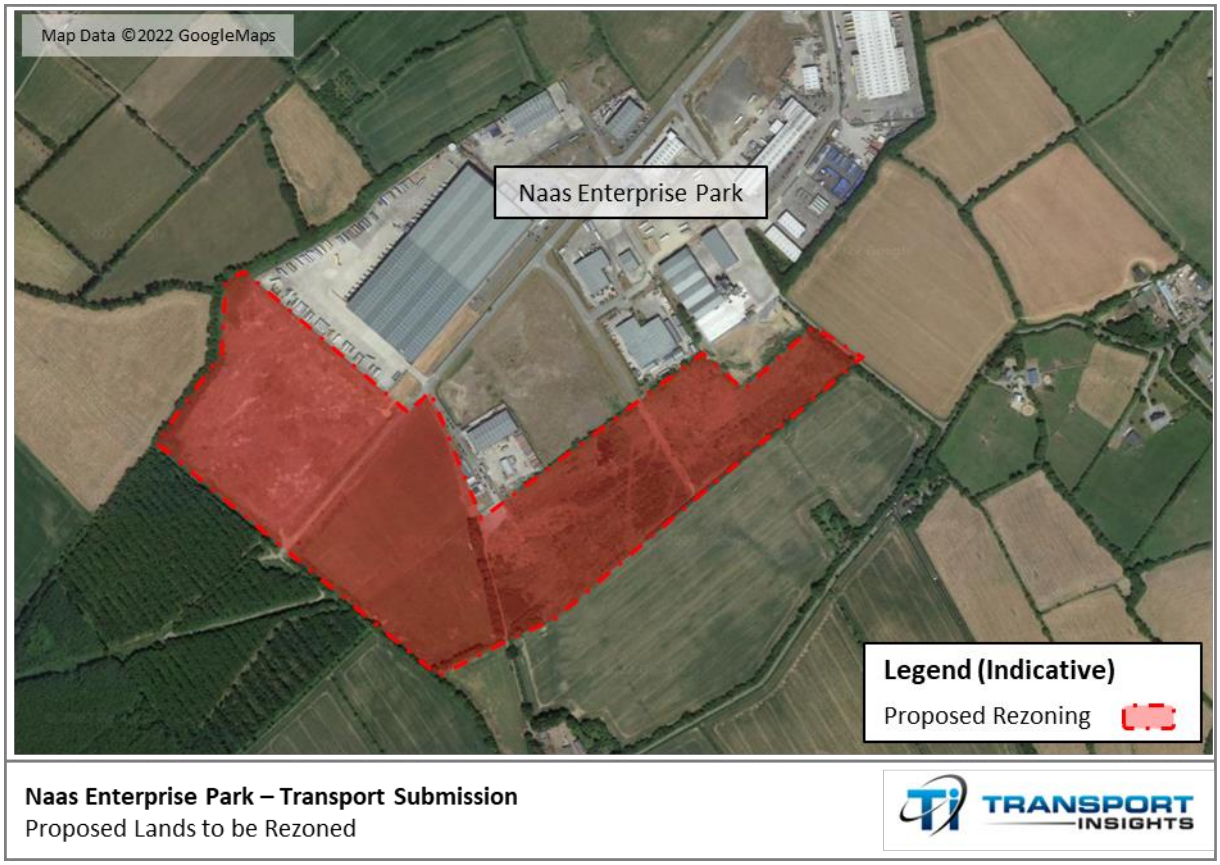
4.1. Introduction

This section of the Submission sets out the anticipated traffic impact of the proposed rezoning of land at NEP on the local road network. It includes traffic growth forecasting for the local road network and development traffic generation and high-level distribution with a view to ascertaining the extent to which the proposed rezoning of land is likely to result in an increase in traffic on local roads

4.2. Development Potential of Proposed Rezoning

As part of the proposed rezoning of lands, the development potential i.e., the scale of development which the rezoning of lands could potentially accommodate was assessed. The following Figure 4.1 illustrates the lands which are proposed to be rezoned.

Figure 4.1 Proposed Lands to be Rezoned



As illustrated by the figure above, the area within the red boundary has a total site area of 22.86 ha which could potentially be developed if rezoned.

4.3. Potential Traffic Generation

Existing traffic survey data (summarised in Sections 3.6 and 3.7 of this Submission), has been used to calculate the traffic generation of the proposed rezoned lands. At this early stage of the rezoning

process, total site areas have been utilised as exact floor areas are unknown at this point. Total site areas provided by the design team have informed the assessment. As set out in Section 3.6, it is noted that all traffic associated with the existing development at NEP and the Ladytown Business Park accesses via the R445/NEP access roundabout, via Lime Drive and Crabapple Road. It is again noted that through access can be made to/from the abovementioned roundabout to Lime Drive/Rowan Tree Road via Crabapple Road and Beech Avenue while Lime Drive/Rowen Tree Road form a cul-de-sac. Therefore, all traffic onto the Crabapple Road and Lime Drive arms of the access roundabout are associated with existing development at NEP and the Ladytown Business Park.

Based on the above, the potential traffic generation of the proposed rezoning of lands has been determined by factoring up the existing traffic generated by the NEP (and Ladytown Business Park) on a pro-rata basis. The existing and proposed (un-zoned) total site areas are set out below, as is the traffic generation factor which has been applied to all traffic recorded arriving to or departing from the park in order to obtain an understanding of the potential traffic generation of the proposed rezoning of lands.

Table 4.1 Traffic Generation Factor

Land-Use	Total Site Area (Ha.)
Existing[1]	108.86
Proposed (un-zoned)	22.86
Traffic Generation Factor	0.21

As can be seen from Table 4.1 above, the proposed rezoning of lands equates to an increase total site area of ca. 21% when compared to the existing total site area. Therefore, a factor of 0.21 has been applied to all traffic recorded arriving to or departing the NEP access arm of the roundabout in order to arrive at an understanding of the potential traffic generation of the proposed rezoning of lands.

4.4. Traffic Assignment

It should be noted that due to the location of the proposed developments on rezoned lands, i.e., with access directly to and from Lime Drive / Rowan Tree Road, all traffic generated by the proposed rezoning of land is assumed to assign onto the Lime Drive arm of the R445/ NEP roundabout. It should also be noted that traffic generated by the proposed rezoning of land will access the site via existing

[1] Existing site area consist of 101.11 ha. related to NEP and 7.75 ha. related to Ladytown Business Park, i.e., all developed land that takes access from the R445/ NEP Access roundabout.

traffic distribution recorded by the traffic surveys with ca. 70% egressing Lime Drive to the R445 east of the access roundabout and ca. 30% to the R445 to the west of the roundabout. Similarly, 73% of vehicles accessing developments within the proposed rezoned lands will arrive from the R445 to the east of the access roundabout with 27% arriving from the west.

4.5. Traffic Growth Forecasting

As recommended within TII's *TTA Guidelines*, three assessment years can be considered. Please note, that a Year of Opening + 7 (2030) assessment year has been included to assess the potential traffic generation of the proposed rezoning of lands against AADT figures contained within the M7 Naas to Newbridge By-pass Upgrade Scheme Project EIS Report. The assessment years which have been accounted for are as follows:

- Base Year (2022);
- Year of Opening (YoO), assumed to be 2023;
- Year of Opening + 7 years (YoO + 7), assumed to be 2030; and
- Year 0f Opening +15 years (YoO +15) assumed to be 2038.

Existing traffic flows on the surrounding road network, as determined via surveys undertaken in 2022, have been adjusted through application of appropriate growth factors to determine YoO , YoO +7, YoO+15 traffic flows. For this assessment, growth factors have been determined from the TII's *Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projection*s, October 2021. Information within these guidelines is provided for Kildare from 2016-2030 and from 2030-2040 for low, central and high sensitivity growth scenarios.

This information is provided for light vehicles (LVs) and heavy vehicles (HVs) and was used to determine the future year do-nothing traffic flows. Central growth factors were assumed for this assessment to determine future year background traffic flows on the surrounding road network. These factors are set out in Table 4.2, which follows.

Table 4.2 TII Traffic Growth Factors (Central) – Kildare

Year	Annual Growth Factor – LV	Annual Growth Factor – HV
2016-2030	1.0197	1.0378
2030-2040	1.0062	1.0155

Based on the TII central growth factors in the preceding Table 4.2, 2022 AADTs have been factored to 2023, 2030 and 2038 levels, to determine the assumed year of opening and horizon year traffic

volumes, without the proposed development in place. Table 4.3 (below) provides an overview of do-nothing base year, YoO, YoO+7 and YoO+15 AADTs.

Table 4.3 R445/ NEP Access Junction Do Nothing AADTs

Road Link	Total Vehicles	Of Which HGVs
R445 (E) 2022	20,047	2,286
R445 (E) 2023	20,484	2,373
R445 (E) 2030	23,837	3,077
R445 (E) 2038	25,293	3,479
Lime Drive (SE) 2022	8,263	1,347
Lime Drive (SE) 2023	8,450	1,397
Lime Drive (SE) 2030	9,896	1,812
Lime Drive (SE) 2038	10,543	2,049
Crabapple Road (S) 2022	3,035	281
Crabapple Road (S) 2023	3,100	291
Crabapple Road (S) 2030	3,598	378
Crabapple Road (S) 2038	3,811	427
R445 (W) 2022	15,595	1,140
R445 (W) 2023	15,923	1,183
R445 (W) 2030	18,430	1,533
R445 (W) 2038	19,488	1,734

4.6. R445/ NEP Access Roundabout Impact

The following table summarises the percentage increase in AADT due to the proposed rezoning of lands based on the traffic generation and trip distribution outlined above.

Table 4.4 R445/ NEP Access Junction Do Something AADTs

Road Link	Total Vehicles	Of Which HGVs	% increase compared to Do Nothing Scenario
R445 (E) 2022	-	-	
R445 (E) 2023	21,488	2,537	4.9%
R445 (E) 2030	24,841	3,241	4.2%

Road Link	Total Vehicles	Of Which HGVs	% increase compared to Do Nothing Scenario
R445 (E) 2038	26,297	3,644	4.0%
Lime Drive (SE) 2022	-	-	-
Lime Drive (SE) 2023	9,859	1,627	16.7%
Lime Drive (SE) 2030	11,305	2,042	14.2%
Lime Drive (SE) 2038	11,952	2,279	13.4%
Crabapple Road (S) 2022	-	-	-
Crabapple Road (S) 2023	3,100	291	0.0%
Crabapple Road (S) 2030	3,598	378	0.0%
Crabapple Road (S) 2038	3,811	427	0.0%
R445 (W) 2022	-	-	-
R445 (W) 2023	16,327	1,248	2.5%
R445 (W) 2030	18,834	1,599	2.2%
R445 (W) 2038	19,892	1,799	2.1%

As can be seen from Table 4.4 above, there is projected to be a 16.7% increase in AADTs on the Lime Drive arm of the junction in the YoO (2023). This decreases to 13.4% in the YoO +15 years (2038).

AADTs on the eastern arm of the R445/ NEP Access Roundabout are projected to increase by 4.9% in the YoO (2023) due to potential development on the unzoned lands. This is projected to decrease to 4.0% in the YoO +15 year (2038). Similarly, there is projected to be a 2.5% increase in AADT on the western arm of the roundabout in the YoO (2023), decreasing to 2.1% in the YoO +15 year (2038).

As can be seen from the Table above, both the R445 road links are projected to experience a percentage increase in AADT of **less than 5%** due to proposed development on un-zoned lands. Whereas the increases on Lime Drive appear to be significant i.e. 16.7% in the YoO (2023) decreasing to 13.4% in the YoO +15 years (2038), this is primarily due to the existing background traffic flows on Lime Drive being relatively low. Furthermore, due to the large disparity in flows between Lime Drive and the R445 arms of the junction, it is envisaged that an increase in traffic flows on Lime Drive may lead to a more balanced flow of traffic through the roundabout junction and could potentially aid its overall operation by rebalancing gap acceptance on each arm of the roundabout. However, it is noted the predicted increases on Lime Drive are above 10%, the threshold likely to be applied here, based on thresholds set out in the TII's TTA Guidelines (2014).

As part of any future planning application for the unzoned lands a junction assessment of the R445/ NEP Access roundabout will be undertaken to determine potential traffic impacts and if deemed necessary mitigation measures applied.

4.7. M7 Junction 10 Impact

An assessment of the traffic impact of the proposed rezoning of lands on the M7 Motorway, specifically junction 10, was also undertaken. This was based on information extracted from the AADT figures contained within the M7 Naas to Newbridge By-pass Upgrade Scheme Project EIS Report Volume 2 – Chapter 6 – Traffic Analysis (December 2013). This report gives project AADT figures for multiple locations in the vicinity of the now completed Junction 10. The relevant locations are outlined below along with the projected AADT figures included within this report and the percentage traffic impact at these locations of the proposed rezoning of lands at NEP. It should be noted that traffic generated by the proposed development on un-zoned lands has been assumed to distribute onto the M7 with 50% travelling to/from the north and 50% travelling to/from the south.

Table 4.5 R445/ NEP Access Junction Do Something AADTs

Road Link	Projected AADT as per EIS (2030)	Additional AADT Generated by Development on Un-zoned Lands (2030)	% increase
R445 (West of Junction 10)	22,700	1,004	4.4%
M7 (Mainline South of Junction 10)	63,500	502	0.8%
M7 (Mainline North of Junction 10)	68,100	502	0.7%

As per Table 4.5 above, it is projected that development on the un-zoned land would result in a 4.4% increase in AADT on the R445 to the immediate west of Junction 10. It can also be seen that the percentage increases in AADT on the mainline of the M7 motorway are ca. 1% to both the north and south of Junction 10. The projected percentage increases are **below 5%** and further assessment of the potential impact of additional development traffic at the M7 Junction 10 would likely not be needed, based on thresholds set out in the TII's TTA Guidelines (2014).

5. Summary and Conclusion

5.1. Summary

Transport Insights has been commissioned by Brock McClure Planning and Development Consultants on behalf of Palm Logistics to prepare a Transport Submission in support of the proposed rezoning of land at NEP. This Transport Submission forms part of an overall submission to KCC as part of Stage 2 of the Draft Kildare County Development Plan 2023-2029 consultation process.

This Submission will present the transport case in support of the proposal to rezone an area of land, ca. 22.86 hectares to the west of the existing NEP. The rezoned land would be expected to facilitate industrial, warehousing and logistics type developments, similar to a number of existing plots at the NEP. Access to the lands is proposed to be facilitated by an extension of the main vehicular access serving the existing NEP.

Site Accessibility

The NEP and the area of land considered for rezoning are situated about halfway between Naas (to the east) and Newbridge (to the southwest). The NEP is accessed directly off the R445 which forms the northern boundary of the NEP. The R445 provides direct access to the M7 at Junction 10 to the northeast of NEP. Access to the NEP is provided from the R445 at the R445/ NEP Access roundabout. Lime Drive and Rowan Tree Road provide the main vehicular and pedestrian access to NEP (and to the unzoned lands). Roads within the NEP are considered low speed limit and traffic calming measures are present, such conditions could be considered conducive to cycling for confident cyclists. Regarding public transport provision, bus stops are present on the R445, ca. 100-150-metres to the southwest of the NEP access roundabout. These bus stops offer several connections to nearby towns Naas and Newbridge and also longer distance connections to Portlaoise, Dublin City and Dublin Airport.

Traffic Impact Assessment

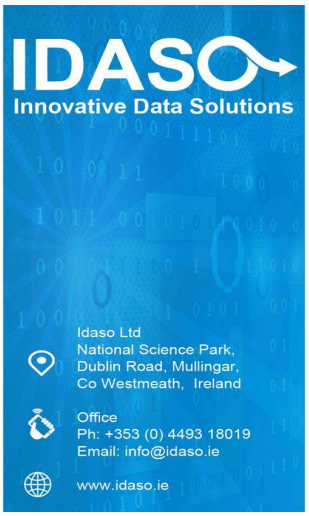
A traffic assessment of the NEP access roundabout was undertaken as part of this Submission. Existing vehicle movements at the junction were surveyed to identify a base year and inform the traffic assessment. The assessment considered future year background growth for the YoO and YoO +15 and also considered the potential impact of predicted development traffic at the R445/ NEP Access roundabout. The assessment indicates some road links are projected to experience a percentage increase in AADT of more than 5% (e.g. NEP access arm). A detailed junction assessment will be undertaken with any future planning application for future zoned lands to assess the impact at the R445/ NEP Access Roundabout. An assessment of the potential impact of development traffic was also undertaken for the recently upgraded Junction 10 of the M7 motorway. This assessment indicated

projected percentage increases in AADT of 0.7% to 4.4% in the YoO+7, percentage impacts below the 5% threshold.

5.2. Conclusion

The proposed rezoning of land to the west of NEP has been assessed in traffic and transport terms. The assessment indicates minor increases in traffic movements on the local road network due to the predicted increases in vehicle movements with further assessment of the NEP site access to be undertaken. Furthermore, the assessment indicates the proposed rezoning will not give rise to a material impact on the performance of the nearby M7 strategic road network.

Appendix A Traffic Survey Data



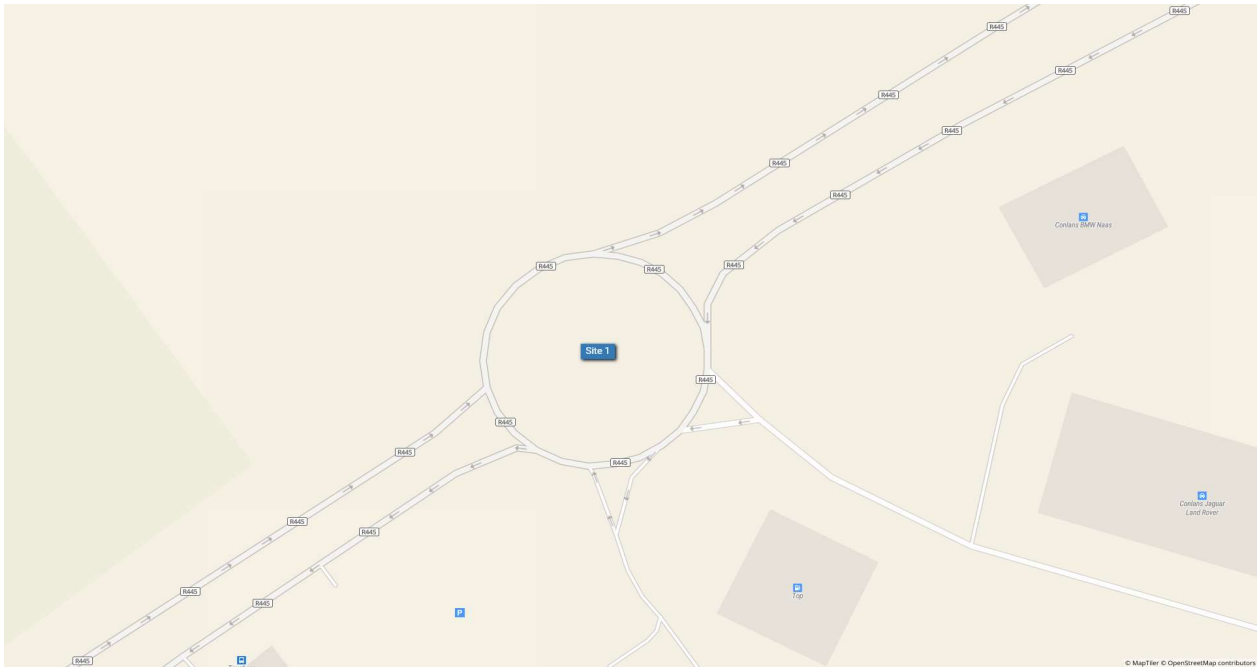
Data Analysis Services
Traffic-Transportation- Commercial-Innovation

029 22073 Naas Enterprise Park

with compliments

IDASO

Survey Name: 029 22073 Naas Enterprise Park
Date: Tue 15 Feb 2022



IDASO

Survey Name: 029 22073 Naas Enterprise Park
Site: Site 1
Location: R445/Lime Drive/Crabapple Road
Date: Tue 15-Feb-2022

	A => A										A => B										A => C									
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	1	0	19	0	18	2	7	0	47	56.3	0	0	14	0	3	0	1	0	18	19.3
07:15	0	0	0	0	0	0	0	0	0	0	0	0	46	0	12	7	4	0	69	77.7	0	0	6	0	4	1	0	0	11	11.5
07:30	0	0	0	0	0	0	0	0	0	0	0	0	35	0	5	7	10	0	57	73.5	0	0	15	0	2	1	0	0	18	18.5
07:45	0	0	0	0	0	0	0	0	0	0	0	0	65	0	15	10	10	0	100	118	0	0	13	0	7	0	0	0	20	20
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	165	0	50	26	31	0	273	325.5	0	0	48	0	16	2	1	0	67	69.3
08:00	0	0	0	0	0	1	0	0	1	1.5	0	0	50	0	6	1	9	0	66	78.2	0	0	14	0	1	1	0	0	16	16.5
08:15	0	0	0	0	0	0	0	0	0	0	0	1	57	0	17	2	11	0	88	102.7	0	0	9	0	5	0	1	0	15	16.3
08:30	0	0	0	0	0	0	0	0	0	0	0	0	65	0	9	3	12	0	89	106.1	0	0	13	0	4	0	0	0	17	17
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H/TOT	0	0	0	0	0	1	1	0	2	3.8	0	1	280	1	43	8	38	0	371	423.8	0	0	57	0	13	2	1	0	73	75.3
09:00	0	0	0	0	0	0	0	0	0	0	0	0	64	0	14	4	3	0	85	90.9	0	0	14	0	7	2	0	0	23	24
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09:30	0	0	0	0	0	0	0	0	0	0	0	0	25	1	11	7	4	3	51	62.7	0	0	6	0	0	1	1	0	8	9.8
09:45	0	0	0	0	0	0	0	0	0	0	0	0	35	0	8	9	5	2	59	72	0	0	16	0	1	1	0	0	18	18.5
H/TOT	0	0	0	0	0	0	1	0	1	2.3	0	0	169	1	47	23	16	5	261	298.3	0	0	45	0	10	4	1	0	60	63.3
10:00	0	0	0	0	0	0	0	0	0	0	0	0	26	0	5	5	10	1	47	63.5	0	0	3	1	1	0	0	0	5	5
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10:30	0	0	0	0	0	0	0	0	0	0	0	0	26	0	9	4	6	2	47	58.8	0	0	11	0	5	1	0	0	17	17.5
10:45	0	0	0	0	1	0	0	0	1	1	0	0	29	1	6	5	3	2	46	54.4	0	0	10	0	4	1	0	0	15	15.5
H/TOT	0	0	0	0	1	0	0	0	1	1	0	0	100	1	32	18	24	7	182	229.2	0	0	35	1	11	3	2	0	52	56.1
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11:15	0	0	0	0	0	0	0	0	0	0	0	0	31	0	8	5	4	0	48	55.7	0	0	11	0	3	1	1	0	16	17.8
11:30	0	0	0	0	0	0	0	0	0	0	0	0	25	1	10	3	4	3	46	55.7	0	0	11	0	2	0	1	0	14	15.3
11:45	0	0	0	0	0	0	0	0	0	0	0	0	31	0	8	7	6	1	53	65.3	0	0	11	0	2	1	0	0	14	14.5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	99	1	34	21	20	4	179	219.5	0	0	41	0	10	2	3	0	56	60.9
12:00	0	0	0	0	0	0	0	0	0	0	0	0	28	0	11	3	8	0	50	61.9	0	0	10	0	2	0	0	0	12	12
12:15	0	0	0	0	0	0	0	0	0	0	0	0	27	1	10	3	7	0	48	58.6	0	0	9	0	2	0	0	0	11	11
12:30	0	0	1	0	0	0	0	0	1	1	0	0	21	0	14	6	5	0	46	55.5	0	0	16	0	4	2	0	0	22	23
12:45	0	0	0	0	1	0	0	0	1	1	0	0	23	0	3	4	7	0	37	48.1	0	0	18	0	7	1	0	0	26	26.5
H/TOT	0	0	1	0	1	0	0	0	2	2	0	0	99	1	38	16	27	0	181	224.1	0	0	53	0	15	3	0	0	71	72.5
13:00	0	0	0	0	0	0	0	0	0	0	0	0	28	1	7	4	8	0	48	60.4	0	0	17	0	4	1	0	0	22	22.5
13:15	0	0	0	0	0	0	0	0	0	0	0	0	25	0	6	3	9	0	43	56.2	0	0	11	0	4	1	0	0	16	16.5
13:30	0	0	0	0	0	0	0	0	0	0	0	0	22	0	7	3	11	0	43	58.8	0	0	10	0	4	0	1	0	15	16.3
13:45	0	0	0	0	0	0	0	0	0	0	0	0	37	0	12	4	6	0	59	68.8	0	0	16	0	2	0	0	0	18	18
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	112	1	32	14	34	0	193	244.2	0	0	54	0	14	2	1	0	71	73.3
14:00	0	0	0	0	0	0	0	0	0	0	0	0	33	0	11	1	7	1	53	63.6	0	0	15	0	3	3	1	1	23	26.8
14:15	0	0	0	0	0	0	0	0	0	0	0	0	24	0	6	4	12	0	46	63.6	0	0	11	0	1	0	0	0	12	12
14:30	0	0	0	0	0	0	0	0	0	0	0	0	31	0	8	7	4	0	50	58.7	0	0	7	0	5	0	0	0	12	12
14:45	0	0	0	0	0	0	1	0	1	2.3	0	1	32	2	7	9	2	0	53	59.5	0	0	5	0	1	0	0	0	6	6
H/TOT	0	0	0	0	0	0	1	0	1	2.3	0	1	120	2	32	21	25	1	202	245.4	0	0	38	0	10	3	1	1	53	56.8
15:00	0	0	0	0	0	0	0	0	0	0	0	0	27	0	9	9	8	1	54	69.9	0	0	2	0	0	1	1	0	4	5.8
15:15	0	0	0	0	0	0	0	0	0	0	0	0	34	1	4	7	8	0	54	67.9	0	0	8	0	3	0	1	0	12	13.3
15:30	0	0	0	0	0	0	0	0	0	0	0	0	23	0	6	7	6	0	42	53.3	0	0	9	0	5	2	0	0	16	17
15:45	0	0	0	0	0	0	0	0	0	0	0	0	28	0	4	7	4	0	43	51.7	0	0	7	0	3	1	0	0	11	11.5
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	112	1	23	30	26	1	193	242.8	0	0	26	0	11	4	2	0	43	47.6
16:00	0	0	0	0	0	0	0	0	0	0	0	0	33	0	6	2	6	0	47	55.8	0	0	8	1	6	1	1	0	17	18.8
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16:30	0	0	0	0	0	1	0	0	1	1.5	0	0	20	1	6	4	11	0	42	58.3	0	0	11	0	5	1	2	0	19	22.1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	27	0	3	2	5	0	37	44.5	0	0	6	0	6	1	0	0	13	13.5
H/TOT	0	0	0	0	0	1	1	1	3	5.8	0	0	103	1	23	11	29	0	167	210.2	0	0	30	1	20	3	3	0	57	62.4
17:00	0	0	0	0	0	0	0	0	0	0	0	0	22	0	2	3	7	0	34	44.6	0	0	13	0	5	1	1	0	20	21.8
17:15	0	0	0	0	0	0	0	0	0	0	0	0	18	0	3	2	6	0	29	37.8	0	0	16	0	6	0	0	0	22	22
17:30	0	0	0	0	0	0	0	0	0	0	0	0	15	0	3	3	5	1	27	36	0	0	18	0	3	0	0	0	21	21
17:45	0	0	0	0	0	0	0	0	0	0	0	0	12	0	3	1	7	0	23	32.6	0	0	16	0	3	0	0	0	19	19
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	67	0	11	9	25	1	113	151	0	0	63	0	17	1	1	0	82	83.8
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18:15	0	0	0	0	0	0	0	0	0	0	0	0	18	0	1	2	5	0	26	33.5	0	1	23	0	4	0	0	0	28	27.4
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H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	55	0	6	7	22	1	91	124.1	0	2	71	0	9	1	2	0	85	86.9
12 TOT	0	0	1	0	2	2	4	1	10	17.2	1	2	1481	10	371	204	317	20	2406	2938.1	0	2	561	2	156	30	18	1	770	808.2

A => D										B => A										B => B									
P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	65	0	13	1	6	0	85	93.3	0	0	6	0	0	2	3	1	12	17.9	0	0	0	0	0	0	0	0	0	0
0	0	84	0	16	2	4	0	106	112.2	0	0	5	0	0	4	3	0	12	17.9	0	0	0	0	0	0	0	0	0	0
0	0	90	1	15	0	7	2	115	126.1	0	0	9	1	1	6	2	0	19	24.6	0	0	0	0	0	0	0	0	0	0
0	0	116	4	15	7	2	1	145	152.1	0	0	11	0	1	0	8	1	21	32.4	0	0	0	0	0	0	0	0	0	0
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0	0	114	0	10	3	6	1	134	144.3	0	0	0	0	10	6	9	0	25	39.7	0	0	0	0	0	0	0	0	0	0
0	0	101	0	13	6	0	1	121	125	0	0	17	0	7	2	8	0	34	45.4	0	0	0	0	0	0	0	0	0	0
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0	0	336	2	45	15	15	4	417	448	0	0	48	0	31	17	29	1	126	173.2	0	0	0	0	0	0	0	0	0	0
0	0	73	0	8	3	4	1	89	96.7	0	0	16	0	10	5	10	0	41	56.5	0	0	0	0	0	0	0	0	0	0
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0	0	57	0	6	2	5	0	70	77.5	0	0	22	0	23	8	10	1	64	82	0	0	0	0	0	0	0	0	0	0
0	0	66	1	13	4	4	0	88	95.2	0	0	17	0	9	6	4	0	36	44.2	0	0	0	0	0	0	0	0	0	0
0	0	256	1	36	13	19	2	327	360.2	0	0	75	0	59	24	26	1	185	231.8	0	0	0	0	0	0	0	0	0	0
0	0	67	3	14	5	2	1	92	98.1	0	0	19	0	13	5	3	1	41	48.4	0	0	1	0	0	0	0	0	1	1
0	0	76	2	10	2	5	0	95	102.5	0	0	16	0	13	7	7	0	43	55.6	0	0	0	0	0	0	0	0	0	0
1	0	89	2	7	3	6	0	108	116.5	0	0	20	0	5	5	5	0	35	44	0	0	0	0	0	0	0	0	0	0
0	0	65	1	9	10	3	1	89	98.9	0	0	16	0	11	6	7	0	40	52.1	0	0	0	0	0	0	0	0	0	0
1	0	297	8	40	20	16	2	384	416	0	0	71	0	42	23	22	1	159	200.1	0	0	1	0	0	0	0	0	1	1
0	0	68	1	16	5	6	1	97	108.3	0	0	14	0	9	5	5	0	33	42	0	0	0	0	0	0	0	0	0	0
0	0	90	4	17	3	4	1	119	126.7	0	0	17	0	14	4	6	2	43	54.8	0	0	0	0	0	0	0	0	0	0
0	0	70	1	14	2	2	1	90	94.6	0	0	16	1	5	4	5	0	31	39.5	0	0	0	0	0	0	0	0	0	0
0	0	60	2	10	3	3	1	79	85.4	0	0	21	1	4	6	8	1	41	55.4	0	0	0	0	0	0	0	0	0	0
0	0	288	8	57	13	15	4	385	415	0	0	68	2	32	19	24	3	148	191.7	0	0	0	0	0	0	0	0	0	0
0	0	78	2	10	6	1	0	97	101.3	0	0	19	0	13	2	5	1	40	48.5	0	0	0	0	0	0	0	0	0	0
0	0	67	0	4	4	4	1	80	88.2	0	0	20	0	5	5	5	0	35	44	0	0	0	0	0	0	0	0	0	0
0	0	77	1	8	3	1	1	91	94.8	0	0	23	0	10	2	3	2	40	46.9	0	0	0	0	0	0	0	0	0	0
0	0	73	1	8	2	1	1	86	89.3	0	0	33	0	7	5	2	0	47	52.1	0	0	0	0	0	0	0	0	0	0
0	0	295	4	30	15	7	3	354	373.6	0	0	95	0	35	14	15	3	162	191.5	0	0	0	0	0	0	0	0	0	0
0	0	67	0	10	3	1	1	82	85.8	0	0	47	0	10	4	5	0	66	74.5	0	0	0	0	0	0	0	0	0	0
0	0	72	2	11	2	3	1	91	96.9	0	0	26	0	4	3	4	0	37	43.7	0	0	0	0	0	0	0	0	0	0
1	0	82	2	9	2	4	0	100	105.4	0	0	23	0	13	4	3	0	43	48.9	0	0	0	0	0	0	0	0	0	0
0	0	72	3	9	2	7	2	95	107.1	0	0	19	0	10	3	7	2	41	53.6	0	0	0	0	0	0	0	0	0	0
1	0	293	7	39	9	15	4	368	395.2	0	0	115	0	37	14	19	2	187	220.7	0	0	0	0	0	0	0	0	0	0
0	0	78	0	14	5	4	1	102	110.7	0	0	24	0	7	1	3	0	35	39.4	0	0	0	0	0	0	0	0	0	0
0	0	85	0	12	3	1	1	102	105.8	0	1	37	0	10	4	7	0	59	69.5	0	0	0	0	0	0	0	0	0	0
0	0	88	2	12	3	4	0	109	115.7	0	0	30	0	11	2	5	0	48	55.5	0	0	0	0	0	0	0	0	0	0
0	0	70	3	10	2	3	2	90	96.9	0	0	30	0	3	2	3	0	38	42.9	0	0	0	0	0	0	0	0	0	0
0	0	321	5	48	13	12	4	403	429.1	0	1	121	0	31	9	18	0	180	207.3	0	0	0	0	0	0	0	0	0	0
0	0	76	1	15	5	5	2	104	115	0	0	42	0	10	3	5	0	60	68	0	0	0	0	0	0	0	0	0	0
0	0	100	1	14	3	4	0	122	128.7	0	0	41	0	7	3	9	1	61	75.2	0	0	0	0	0	0	0	0	0	0
1	0	80	1	16	2	4	1	105	111.4	0	0	38	0	7	6	1	1	53	58.3	0	0	0	0	0	0	0	0	0	0
0	0	64	3	10	0	5	3	85	94.5	0	0	34	2	6	3	2	2	49	55.1	0	0	0	0	0	0	0	0	0	0
1	0	320	6	55	10	18	6	416	449.6	0	0	155	2	30	15	17	4	223	256.6	0	0	0	0	0	0	0	0	0	0
0	1	73	0	8	2	5	2	91	99.9	0	0	68	0	12	3	5	0	88	96	0	0	0	0	0	0	1	0	1	2.3
0	0	82	1	15	4	6	0	108	117.8	0	0	38	0	13	1	4	1	57	63.7	0	0	0	0	0	0	0	0	0	0
0	0	99	3	17	1	4	1	125	131.7	0	0	55	0	8	4	2	1	70	75.6	0	0	0	0	0	0	0	0	0	0
0	0	90	0	16	1	1	2	110	113.8	3	0	52	2	12	0	1	0	70	68.9	0	0	0	0	0	0	0	0	0	0
0	1	344	4	56	8	16	5	434	463.2	3	0	213	2	45	8	12	2	285	304.2	0	0	0	0	0	0	1	0	1	2.3
0	0	108	1	19	1	4	1	134	140.7	0	1	111	0	8	3	5	1	129	137.4	0	0	0	0	0	0	0	0	0	0
0	0	103	0	19	0	5	0	127	133.5	0	0	68	1	8	0	2	0	79	81.6	0	0	0	0	0	0	0	0	0	0
1	0	107	2	6	2	3	1	122	127.1	0	0	94	1	10	1	1	0	107	108.8	0	0	0	0	0	0	0	0	0	0
0	1	91	0	14	1	2	0	109	111.5	0	0	48	0	3	0	1	0	52	53.3	0	0	0	0	0	0	0	0	0	0
1	1	409	3	58	4	14	2	492	512.8	0	1	321	2	29	4	9	1	367	381.1	0	0	0	0	0	0	0	0	0	0
0	0	113	1	15	3	2	1	135	140.1	0	0	39	2	2	3	3	0	49	54.4	0	0	0	0	0	0	0	0	0	0
0	0	91	1	20	3	1	1	117	120.8	0	0	16	0	2	2	4	0	24	30.2	0	0	0	0	0	0	0	0	0	0
0	0	89	1	11	0	3	4	108	115.9	0	0	22	0	1	1	1	0	25	26.8	0	0	0	0	0	0	0	0	0	0
0	0	139	0	6	1	2	1	149	153.1	0	0	9	0	5	0	3	0	17	20.9	0	0	0	0	0	0	0	0	0	0
0	0	432	3	52	7	8	7	509	529.9	0	0	86	2	10	6	11	0	115	132.3	0	0	0	0	0	0	0	0	0	0
4	2	3946	56	575	137	174	46	4940	5276.3	3	2	1399	11	383	165	218	20	2201	2583.3	0	0	1	0	0	0	1	0	2	3.3

B => C										B => D										C => A									
P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	2	0	0	0	2	2	0	0	3	0	4	2	0	1	10	12	0	0	7	0	4	1	4	0	16	21.7
0	0	2	0	0	0	0	0	2	2	0	0	2	0	4	0	0	0	6	6	0	0	7	0	3	2	0	0	12	13
0	0	1	0	1	0	0	0	2	2	0	0	1	0	0	0	0	0	1	1	0	0	14	0	4	2	2	0	22	25.6
0	0	0	0	1	0	0	0	1	1	0	0	2	0	2	2	0	0	6	7	0	0	7	0	5	0	1	0	13	14.3
0	0	3	0	4	0	0	0	7	7	0	0	8	0	10	4	0	1	23	26	0	0	35	0	16	5	7	0	63	74.6
0	0	1	0	2	0	0	0	3	3	0	0	3	0	0	3	0	0	6	7.5	0	1	11	0	3	0	2	0	17	19
0	0	3	0	1	0	0	0	4	4	0	0	1	0	0	0	0	0	1	1	0	0	8	0	8	2	1	0	19	21.3
0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	4	4.5	0	0	8	1	10	3	1	0	23	25.8
0	0	0	0	2	0	0	0	2	2	0	0	3	0	0	1	2	0	6	9.1	0	0	7	0	2	2	0	0	11	12
0	0	4	0	5	0	0	0	9	9	0	0	9	0	1	5	2	0	17	22.1	0	1	34	1	23	7	4	0	70	78.1
0	0	7	0	1	0	0	0	8	8	0	0	7	0	1	2	0	0	10	11	0	0	13	0	1	1	3	0	18	22.4
0	0	2	0	3	0	0	0	5	5	0	0	8	0	4	1	1	0	14	15.8	0	0	12	0	7	4	2	0	25	29.6
0	0	5	0	3	1	0	0	9	9.5	0	0	15	1	4	0	0	1	21	22	0	0	10	0	8	0	1	0	19	20.3
0	0	4	0	0	0	0	0	4	4	0	0	8	0	3	1	0	0	12	12.5	0	0	11	0	6	2	2	0	21	24.6
0	0	18	0	7	1	0	0	26	26.5	0	0	38	1	12	4	1	1	57	61.3	0	0	46	0	22	7	8	0	83	96.9
0	0	4	0	1	0	0	0	5	5	0	0	5	0	4	0	0	0	9	9	0	0	10	0	3	2	0	0	15	16
0	0	5	0	4	1	0	0	10	10.5	0	0	11	0	4	1	1	0	17	18.8	0	0	13	0	5	0	2	0	20	22.6
0	0	3	0	5	0	0	0	8	8	0	0	5	0	4	0	0	1	10	11	0	0	9	0	5	2	0	0	16	17
0	0	5	0	1	0	0	0	6	6	0	0	9	1	3	5	0	1	19	22.5	0	0	9	0	5	2	2	0	18	21.6
0	0	17	0	11	1	0	0	29	29.5	0	0	30	1	15	6	1	2	55	61.3	0	0	41	0	18	6	4	0	69	77.2
0	0	3	0	2	0	0	0	5	5	0	0	16	0	4	0	0	0	20	20	0	0	15	0	5	0	1	0	21	22.3
0	0	3	0	0	0	0	0	3	3	0	0	9	0	0	1	0	0	10	10.5	0	0	4	0	4	1	0	0	9	9.5
0	0	3	0	1	0	0	0	4	4	0	0	20	0	5	0	1	1	27	29.3	0	0	9	0	4	0	6	1	20	28.8
0	0	4	0	0	1	0	0	5	5.5	0	0	16	0	4	0	0	0	20	20	0	0	10	0	3	1	2	0	16	19.1
0	0	13	0	3	1	0	0	17	17.5	0	0	61	0	13	1	1	1	77	79.8	0	0	38	0	16	2	9	1	66	79.7
0	0	10	0	0	0	0	0	10	10	0	0	15	1	5	1	0	0	22	22.5	0	0	8	1	3	3	2	0	17	21.1
0	0	4	0	2	0	0	0	6	6	0	0	13	0	1	1	0	0	15	15.5	0	0	11	1	3	0	2	0	17	19.6
0	0	2	0	1	0	0	0	3	3	0	0	22	0	1	0	0	0	23	23	0	0	9	0	4	0	0	0	13	13
0	0	10	0	3	0	1	0	14	15.3	0	0	8	0	2	3	0	0	13	14.5	0	0	11	1	4	0	1	0	17	18.3
0	0	26	0	6	0	1	0	33	34.3	0	0	58	1	9	5	0	0	73	75.5	0	0	39	3	14	3	5	0	64	72
0	0	13	0	1	0	0	0	14	14	0	0	19	0	3	0	0	1	23	24	0	0	12	0	4	0	2	0	18	20.6
0	0	11	0	1	0	0	0	12	12	0	0	16	0	7	1	0	0	24	24.5	0	0	16	0	7	0	1	0	24	25.3
0	0	9	0	0	0	0	0	9	9	0	0	17	0	3	1	0	0	21	21.5	0	0	6	0	6	1	1	0	14	15.8
0	0	5	0	1	1	0	0	7	7.5	0	0	10	0	3	1	1	1	16	18.8	0	0	16	0	0	2	0	0	18	19
0	0	38	0	3	1	0	0	42	42.5	0	0	62	0	16	3	1	2	84	88.8	0	0	50	0	17	3	4	0	74	80.7
0	0	6	0	2	1	0	0	9	9.5	0	0	22	0	2	0	2	1	27	30.6	0	0	18	0	3	1	2	0	24	27.1
0	0	5	0	1	0	0	0	6	6	0	0	19	0	2	0	0	0	21	21	0	0	16	0	3	2	2	0	23	26.6
0	0	0	0	1	0	0	0	1	1	0	0	19	0	2	0	1	2	24	27.3	0	0	14	1	3	2	1	0	21	23.3
0	0	4	0	2	0	0	0	6	6	0	0	18	0	4	1	1	0	24	25.8	0	0	9	0	2	2	1	0	14	16.3
0	0	15	0	6	1	0	0	22	22.5	0	0	78	0	10	1	4	3	96	104.7	0	0	57	1	11	7	6	0	82	93.3
0	0	4	0	1	0	0	0	5	5	0	0	18	0	3	0	2	0	23	25.6	0	0	14	0	3	1	2	0	20	23.1
0	0	3	0	4	0	0	0	7	7	0	0	16	0	6	0	0	0	22	22	0	0	14	0	3	0	0	0	17	17
0	0	6	0	0	0	0	0	6	6	0	0	16	0	2	0	1	1	20	22.3	0	0	14	0	6	2	2	0	24	27.6
0	0	6	0	0	1	0	0	7	7.5	0	0	20	1	3	0	0	1	25	26	0	0	5	0	4	4	0	0	13	15
0	0	19	0	5	1	0	0	25	25.5	0	0	70	1	14	0	3	2	90	95.9	0	0	47	0	16	7	4	0	74	82.7
0	0	6	0	3	0	0	0	9	9	0	0	18	0	2	0	0	1	21	22	0	0	18	0	2	1	0	0	21	21.5
0	0	3	0	0	0	0	0	3	3	0	0	27	0	4	0	0	0	31	31	0	0	14	1	2	0	0	0	17	17
0	0	4	0	0	0	0	0	4	4	0	0	24	0	1	0	0	1	26	27	0	0	11	0	7	1	4	0	23	28.7
0	0	8	0	1	1	0	0	10	10.5	0	0	19	0	2	0	0	0	21	21	0	3	14	0	5	1	0	0	23	21.7
0	0	21	0	4	1	0	0	26	26.5	0	0	88	0	9	0	0	2	99	101	0	3	57	1	16	3	4	0	84	88.9
0	0	2	0	1	0	0	0	3	3	0	1	41	0	5	1	0	0	48	47.9	0	0	17	0	6	0	2	0	25	27.6
0	0	2	0	1	0	0	0	3	3	0	0	18	0	2	0	0	0	20	20	0	0	15	0	3	0	0	0	18	18
0	0	6	0	1	0	0	0	7	7	0	0	52	1	8	0	0	1	62	63	0	0	15	0	1	0	1	0	17	18.3
0	0	6	0	1	0	0	0	7	7	0	0	23	2	1	2	0	0	28	29	0	0	13	0	2	0	0	0	15	15
0	0	16	0	4	0	0	0	20	20	0	1	134	3	16	3	0	1	158	159.9	0	0	60	0	12	0	3	0	75	78.9
0	0	8	0	1	0	0	0	9	9	0	0	27	0	1	0	0	0	28	28	0	0	21	0	1	0	1	0	23	24.3
0	0	4	0	1	0	0	0	5	5	0	0	19	0	2	1	0	0	22	22.5	0	0	12	0	4	0	1	0	17	18.3
0	0	5	0	0	0	0	0	5	5	0	0	1	0	0	0	0	0	1	1	0	0	17	0	8	1	0	0	26	26.5
0	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	2	2	0	0	9	0	2	0	1	0	12	13.3
0	0	18	0	2	0	0	0	20	20	0	0	49	0	3	1	0	0	53	53.5	0	0	59	0	15	1	3	0	78	82.4
0	0	208	0	60	7	1	0	276	280.8	0	1	685	7	128	33	13	15	882	929.8	0	4	563	6	196	51	61	1	882	985.4

C => B										C => C										C => D									
P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	2	0	0	0	12	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	1	9	10
0	0	2	0	0	0	1	0	3	4.3	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	1	0	0	7	7.5
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	0	2	1	2	0	12	15.1
0	0	3	0	0	0	1	0	4	5.3	0	0	0	0	0	0	0	0	0	0	0	0	26	0	9	2	2	1	40	44.6
0	0	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	1	0	0	6	6.5
0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3
0	0	2	0	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	4	4.5
0	0	2	0	0	0	1	0	3	4.3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4	4
0	0	5	0	3	0	1	0	9	10.3	0	0	0	0	0	0	0	0	0	0	0	0	13	0	2	2	0	0	17	18
0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	0	0	7	7
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	1	0	5	6.3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	6
0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
0	0	3	0	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	13	0	6	0	1	0	20	21.3
0	0	5	0	1	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	8	0	4	0	0	0	12	12
0	0	0	0	0	1	1	0	2	3.8	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	1	0	0	9	9.5
0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	7	0	2	1	0	0	10	10.5
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	5
0	0	8	0	1	1	1	0	11	12.8	0	0	0	0	0	0	0	0	0	0	0	0	26	0	8	2	0	0	36	37
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	2	0	1	0	11	12.3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	1	2	0	11	14.1
0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	8	1	1	1	0	0	11	11.5
0	0	2	0	0	1	0	0	3	3.5	0	0	0	0	0	0	0	0	0	0	0	0	4	1	2	2	1	0	10	12.3
0	0	4	0	0	1	0	0	5	5.5	0	0	0	0	0	0	0	0	0	0	0	0	25	2	8	4	4	0	43	50.2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	6	7.3
0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	7	0	2	0	1	0	10	11.3
0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	0	0	7	7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	3	0	0	0	12	12
0	0	2	0	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	26	1	6	0	2	0	35	37.6
0	0	1	0	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	10	0	4	0	1	0	15	16.3
0	0	0	0	0	1	0	0	1	1.5	0	0	0	0	0	0	0	0	0	0	0	0	10	0	4	0	0	0	14	14
0	0	7	0	2	1	0	0	10	10.5	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7
0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	1	0	7	8.3
0	0	10	0	4	2	0	0	16	17	0	0	0	0	0	0	0	0	0	0	0	0	32	0	9	0	2	0	43	45.6
0	0	0	0	0	0	1	0	1	2.3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	5	6.3
0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	1	0	0	9	9.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4	4
0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	0	0	8	8
0	0	7	0	0	0	1	0	8	9.3	0	0	0	0	0	0	0	0	0	0	0	0	21	0	3	1	1	0	26	27.8
0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	4	0	0	0	0	0	4	4
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	1	0	0	6	6.5
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	0	2	0	0	1	10	11
0	0	3	0	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	5	5.5
0	0	5	0	2	0	0	0	7	7	0	0	1	0	0	0	0	0	1	1	0	0	19	0	3	2	0	1	25	27
0	0	3	0	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	0	7	7
0	0	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	0	0	0	9	9
0	0	0	0	0	0	1	0	1	2.3	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	0	1	0	11	12.3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	1	0	0	9	9.5
0	0	4	0	2	0	1	0	7	8.3	0	0	0	0	0	0	0	0	0	0	0	0	26	0	8	1	1	0	36	37.8
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	7	0	4	0	0	0	11	11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	3	1	1	0	19	20.8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	3	1	0	0	15	15.5
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	1	0	0	9	9.5
0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	40	0	10	3	1	0	54	56.8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	0	0	0	9	9
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	8	0	1	0	0	0	10	9.4
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	0	10	10.5
0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	5	5
0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	1	28	0	4	1	0	0	34	33.9
0	0	56	0	16	4	5	0	81	89.5	0	0	1	0	0	0	0	0	1	1	0	1	295	3	76	18	14	2	409	437.6

D => A										D => B										D => C									
P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	105	0	17	4	6	2	134	145.8	0	0	11	0	4	0	1	0	16	17.3	0	0	5	0	2	1	0	0	8	8.5
0	0	107	1	23	4	4	0	139	146.2	0	0	7	0	6	1	0	0	14	14.5	0	0	6	0	2	0	0	0	8	8
0	0	105	1	19	2	3	3	133	140.9	0	1	30	0	8	1	0	0	40	39.9	0	0	14	0	7	0	0	0	21	21
0	1	100	3	17	1	9	2	133	146.6	0	0	42	0	13	0	1	0	56	57.3	0	0	4	0	1	0	0	0	5	5
0	1	417	5	76	11	22	7	539	579.5	0	1	90	0	31	2	2	0	126	129	0	0	29	0	12	1	0	0	42	42.5
0	0	112	2	12	2	6	3	137	148.8	0	0	25	0	2	2	0	0	29	30	0	1	7	0	5	1	0	0	14	13.9
0	0	88	4	7	4	2	4	109	117.6	0	0	27	0	6	0	1	0	34	35.3	0	0	11	0	1	0	0	0	12	12
0	1	81	1	7	4	4	0	98	104.6	0	0	37	0	3	0	1	0	41	42.3	0	0	8	0	6	1	0	0	15	15.5
0	0	80	2	9	2	8	0	101	112.4	0	0	46	0	11	1	1	0	59	60.8	0	0	11	0	3	1	0	0	15	15.5
0	1	361	9	35	12	20	7	445	483.4	0	0	135	0	22	3	3	0	163	168.4	0	1	37	0	15	3	0	0	56	56.9
1	0	69	0	9	2	6	1	88	97	0	0	31	0	6	0	0	0	37	37	0	0	6	0	6	2	0	0	14	15
0	0	100	4	8	2	5	0	119	126.5	0	0	15	0	7	1	1	1	25	27.8	0	0	10	0	5	0	0	0	15	15
0	0	77	1	17	5	2	2	104	111.1	0	0	10	0	2	0	0	0	12	12	0	0	8	0	1	0	0	0	9	9
0	0	57	5	9	7	6	3	87	101.3	0	0	13	0	3	1	1	1	19	21.8	0	0	10	0	4	1	0	0	15	15.5
1	0	303	10	43	16	19	6	398	435.9	0	0	69	0	18	2	2	2	93	98.6	0	0	34	0	16	3	0	0	53	54.5
0	0	44	3	9	1	5	0	62	69	0	0	11	0	9	4	0	0	24	26	0	0	11	0	4	1	0	0	16	16.5
0	0	61	1	6	4	6	0	78	87.8	0	0	10	0	0	0	3	0	13	16.9	0	0	7	0	4	0	0	0	11	11
0	0	67	1	8	3	3	3	85	93.4	0	0	11	0	5	0	0	0	16	16	0	0	9	0	4	0	1	0	14	15.3
0	0	80	1	10	5	3	1	100	107.4	0	0	6	0	3	0	0	0	9	9	0	0	9	0	2	0	0	0	11	11
0	0	252	6	33	13	17	4	325	357.6	0	0	38	0	17	4	3	0	62	67.9	0	0	36	0	14	1	1	0	52	53.8
1	0	74	0	12	4	4	0	95	101.4	0	0	9	0	1	1	1	0	12	13.8	0	0	7	0	2	0	0	0	9	9
0	0	77	2	5	6	3	0	93	99.9	0	0	5	0	2	1	2	0	10	13.1	0	0	3	0	2	0	0	0	5	5
0	0	66	0	17	7	7	1	98	111.6	0	0	9	0	4	4	0	0	17	19	0	0	5	0	0	0	0	0	5	5
0	0	64	2	7	4	6	0	83	92.8	0	0	9	1	2	0	1	2	15	18.3	0	0	7	0	2	1	0	0	10	10.5
1	0	281	4	41	21	20	1	369	405.7	0	0	32	1	9	6	4	2	54	64.2	0	0	22	0	6	1	0	0	29	29.5
0	0	63	2	20	1	5	2	93	102	0	0	6	0	2	1	1	1	11	13.8	0	0	3	0	2	0	0	0	5	5
0	0	60	1	6	0	2	0	69	71.6	0	0	17	0	0	1	1	1	20	22.8	0	0	12	0	1	0	0	0	13	13
1	0	97	1	16	4	3	2	124	131.1	0	0	7	0	2	2	2	0	13	16.6	0	0	2	0	2	1	0	0	5	5.5
1	0	71	0	7	3	5	0	87	94.2	0	0	11	0	1	0	1	0	13	14.3	0	0	5	1	1	0	0	0	7	7
2	0	291	4	49	8	15	4	373	398.9	0	0	41	0	5	4	5	2	57	67.5	0	0	22	1	6	1	0	0	30	30.5
0	0	82	3	12	1	1	0	99	100.8	0	0	7	0	1	0	0	1	9	10	0	0	10	0	5	0	0	0	15	15
1	0	66	1	10	4	7	0	89	99.3	0	0	9	0	3	0	0	0	12	12	0	0	12	0	2	0	0	0	14	14
0	0	71	1	9	0	5	2	88	96.5	0	0	5	0	2	0	1	0	8	9.3	0	0	7	0	3	0	0	0	10	10
0	0	75	2	1	2	4	1	85	92.2	0	0	15	0	3	0	1	0	19	20.3	0	0	7	0	1	0	0	0	8	8
1	0	294	7	32	7	17	3	361	388.8	0	0	36	0	9	0	2	1	48	51.6	0	0	36	0	11	0	0	0	47	47
0	0	86	0	13	3	4	0	106	112.7	0	0	10	0	2	1	1	1	15	17.8	0	0	6	0	1	1	0	0	8	8.5
0	2	55	0	10	8	4	1	80	89	0	0	18	0	2	3	0	0	23	24.5	0	0	7	1	0	0	0	0	8	8
0	0	59	3	15	2	3	2	84	90.9	0	0	5	0	2	0	1	0	8	9.3	0	0	5	0	0	0	0	0	5	5
0	0	88	2	10	4	4	1	109	117.2	0	0	15	0	4	1	0	2	22	24.5	0	0	7	0	0	0	0	0	7	7
0	2	288	5	48	17	15	4	379	409.8	0	0	48	0	10	5	2	3	68	76.1	0	0	25	1	1	1	0	0	28	28.5
0	0	93	1	5	6	4	1	110	119.2	0	0	8	0	3	0	0	0	11	11	0	0	5	0	1	0	0	0	6	6
0	0	84	2	10	4	4	0	104	111.2	0	0	14	0	5	2	0	1	22	24	0	0	10	0	2	0	1	0	13	14.3
0	0	81	2	16	3	5	2	109	119	0	0	10	0	0	0	0	0	10	10	0	0	3	0	2	1	0	0	6	6.5
0	0	94	1	12	5	7	1	120	132.6	0	0	12	0	2	0	0	1	15	16	0	0	2	0	1	0	0	0	3	3
0	0	352	6	43	18	20	4	443	482	0	0	44	0	10	2	0	2	58	61	0	0	20	0	6	1	1	0	28	29.8
0	1	108	0	14	4	3	2	132	139.3	0	0	12	0	3	0	0	0	15	15	0	0	7	0	0	0	0	0	7	7
0	0	110	1	15	2	4	0	132	138.2	0	0	6	0	6	0	0	1	13	14	0	0	10	0	0	0	1	0	11	12.3
0	0	120	0	18	2	2	2	144	149.6	0	0	8	0	2	0	0	0	10	10	0	0	6	0	1	0	0	0	7	7
0	0	109	1	13	2	2	0	127	130.6	0	0	9	0	2	1	1	0	13	14.8	0	0	6	0	0	0	0	0	6	6
0	1	447	2	60	10	11	4	535	557.7	0	0	35	0	13	1	1	1	51	53.8	0	0	29	0	1	0	1	0	31	32.3
0	0	133	1	17	1	1	1	154	156.8	0	0	10	0	1	0	0	0	11	11	0	0	5	0	2	0	0	0	7	7
0	0	99	1	21	0	1	1	123	125.3	0	0	9	0	2	1	0	1	13	14.5	0	0	6	0	2	0	0	0	8	8
0	0	119	1	5	1	1	2	129	132.8	0	0	7	0	2	0	0	0	9	9	0	0	8	0	1	0	0	0	9	9
0	0	116	0	12	2	3	0	133	137.9	0	0	7	0	1	0	0	0	8	8	0	0	10	0	0	0	0	0	10	10
0	0	467	3	55	4	6	4	539	552.8	0	0	33	0	6	1	0	1	41	42.5	0	0	29	0	5	0	0	0	34	34
0	0	85	3	5	1	2	1	97	101.1	0	0	10	0	2	0	0	1	13	14	0	0	9	0	0	0	0	0	9	9
0	0	101	2	2	1	2	0	108	111.1	0	0	9	0	0	0	0	0	9	9	0	0	7	0	1	0	0	0	8	8
0	0	73	3	4	1	3	2	86	92.4	0	0	8	0	0	0	0	0	8	8	0	0	9	0	1	0	0	0	10	10
0	0	65	0	9	2	4	0	80	86.2	0	0	11	0	0	0	0	1	12	13	0	0	6	0	2	0	0	0	8	8
0	0	324	8	20	5	11	3	371	390.8	0	0	38	0	2	0	0	2	42	44	0	0	31	0	4	0	0	0	35	35
5	5	4077	69	535	142	193	51	5077	5442.9	0	1	639	1	152	30	24	16	863	924.6	0	1	350	2	97	12	3	0	465	474.3

D => D									
P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	2	0	0	0	0	0	2	2
0	0	1	0	0	0	1	0	2	3.3
0	0	1	0	1	1	0	0	3	3.5
0	0	2	0	0	0	0	0	2	2
0	0	2	0	0	0	0	0	2	2
0	0	6	0	1	1	1	0	9	10.8
0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0	2	2
0	0	1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	1	1
0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0	2	2
0	0	1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	1	0	1	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	2	0	1	0	0	0	3	3
0	0	1	0	0	0	0	0	1	1
0	0	0	0	1	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1	1
0	0	2	0	1	0	0	0	3	3
0	0	24	0	6	1	1	0	32	33.8

ECOLOGICAL IMPACT ASSESSMENT REPORT

FOR

Proposed Re-zoning of Lands

AT

Naas Business Park, Newbridge Road,

Naas, Co. Kildare

ON BEHALF OF

Palm Logistics

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Prepared by
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1 INTRODUCTION

Enviroguide Consulting was commissioned by Palm Logistics to undertake an Ecological Impact Assessment for a Proposed Re-zoning of Lands at Naas Enterprise Park, Newbridge Road, Naas, Co. Kildare.

This Ecological Impact Assessment (EcIA) assesses the potential effects of the proposed re-zoning of lands, hereafter referred to as the "Proposed Re-zoning", on habitats and species; particularly those protected by National and International legislation or considered to be of particular nature conservation importance. As the Proposed Re-zoning in and of itself does not involve any construction, where reference is made to Construction and/or Operational Phases of development, this refers to the Construction and Operational Phases of potential future developments at the Site that would be typical (Warehouse/Industry) **as a result of the Proposed Re-zoning**.

This report will describe the ecology of the Proposed Re-zoning area, with emphasis on habitats, flora and fauna, and will assess the potential effects of the Construction and Operational Phases on these ecological receptors. The report follows Guidelines for Ecological Impact Assessment in the UK and Ireland, by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).

1.1 Quality assurance and competence

Synergy Environmental Ltd., T/A Enviroguide Consulting, is wholly Irish Owned multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All Enviroguide consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development.

Enviroguide staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Dr Sanni Hintikka, Ecologist with Enviroguide, undertook the desktop research for this report. Enviroguide Senior Ecologist Dr Siobhán Atkinson together with Sanni Hintikka undertook the habitat, mammal and invasive species surveys for this report. Enviroguide Ecologist and Ornithologist Brian McCloskey undertook the Breeding Bird and Bat Assessment Surveys.

Dr Sanni Hintikka has a B.Sc. (Hons) in Zoology and a Ph.D. in Marine Ecology from University College Dublin, and a wealth of experience in desktop research, bioinformatics analyses, literature review and reporting, as well as practical field and laboratory experience including freshwater and marine fish surveys and environmental DNA analysis. Sanni has prepared several Stage I and Stage II Appropriate Assessment Reports.

Dr Siobhán Atkinson has a B.Sc. (Hons) in Environmental Biology and a Ph.D. in Freshwater Biology from University College Dublin, and extensive experience in desktop research, literature review and reporting, as well as practical field and laboratory experience including

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environmental DNA analysis, freshwater macroinvertebrate sampling and identification, fish sampling and processing and habitat surveying. Siobhán has prepared Ecological Impact Assessments (EcIA), Stage I and Stage II Appropriate Assessment Reports, Habitat Surveys and Invasive Species Surveys and input and reviewed Ecological and Environmental assessments for several EIA Reports

Brian McCloskey is a graduate Ecologist and experienced Ornithologist with 11 years of birding experience. Brian holds a degree in Planning and Environmental management from Technological University Dublin. Brian is a longstanding and active member of Bird Watch Ireland and has provided Ornithology survey work for ecological consultancies, e.g., Vantage points surveys of Gulls, Terns, Raptors, Waders and Wildfowl; hinterland surveys of the above as well as riverine species; and breeding waders and country birds. Brian is highly experienced with all survey methodologies and with surveying all species groups of Irish birds and migrants.

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2 RELEVANT LEGISLATION

An Ecological Impact Assessment (EcIA) is a process of identifying, quantifying, and evaluating potential effects of development-related or other actions on habitats, species and ecosystems (CIEEM, 2016). The Proposed Re-zoning of Lands is a sub-threshold for an Environmental Impact Assessment (EIA) under the Planning and Development Regulations 2001-2021, as amended.

When an EcIA is undertaken as part of an EIA process it is subject to the EIA Regulations (under the EU Planning and Development [Environmental Impact Assessment] Regulations 2001-2021). An EcIA is not a statutory requirement, however it is a best practice evaluation process. This EcIA has been undertaken to support and assess the Proposed Re-zoning planning application and assesses the potential impacts that the Proposed Re-zoning may have on the ecology of the site and its environs. Where potential for a risk to the environment is identified, mitigation measures are proposed on the basis that by deploying these mitigation measures the risk is eliminated or reduced to an insignificant level. This EcIA is provided to assist the Competent Authority with its decision making in respect of the Proposed Re-zoning of Lands.

2.1 National Legislation

2.1.1 Wildlife Act 1976 and amendments

The Wildlife Act 1976 was enacted to provide protection to birds, animals, and plants in Ireland and to control activities which may have an adverse impact on the conservation of wildlife. With regard to the listed species, it is an offence to disturb, injure or damage their breeding or resting place wherever these occur without an appropriate licence from the National Parks and Wildlife Service (NPWS). This list includes all wild birds along with their nests and eggs. Intentional destruction of an active nest from the building stage up until the chicks have fledged is an offence. This includes the cutting of hedgerows from the 1st of March to the 31st of August. The act also provides a mechanism to give statutory protection to Natural Heritage Areas (NHAs). The Wildlife Amendment Act 2000 widened the scope of the Act to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act.

2.1.2 EU Habitats Directive 1992 and EC (Birds and Natural Habitats) Regulations 2011

The EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992) provides protection to particular species and habitats throughout Europe. The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011.

Annex IV of the EU Habitats Directive provides protection to a number of listed species, wherever they occur. Under Regulation 23 of the Habitats Directive, any person who, in regard to the listed species, “Deliberately captures or kills any specimen of these species in the wild, deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration, deliberately takes or destroys eggs from the wild or damages or destroys a breeding site or resting place of such an animal shall be guilty of an offence.”

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2.1.3 Flora (Protection) Order, 2015

The Flora (Protection) Order (S.I. No. 356/2015) affords protection to several species of plant in Ireland, including 68 vascular plants, 40 mosses, 25 liverworts, 1 stonewort and 1 lichen. This Act makes it illegal for anyone to uproot, cut or damage any of the listed plant species and it also forbids anyone from altering, interfering, or damaging their habitats. This protection is not confined to within designated conservation sites and applies wherever the plants are found.

2.1.4 Invasive Species Legislation

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

Failure to comply with the legal requirements set down in this legislation can result in either civil or criminal prosecution, or both, with very severe penalties accruing. Convicted parties under the Act can be fined up to €500,000.00, jailed for up to 3 years, or both.

Extracts from the relevant sections of the regulations are reproduced below.

"49(2) Save in accordance with a licence granted [by the Department of Arts, Heritage and the Gaeltacht]*, any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in anyplace* [a restricted non-native plant]*, shall be guilty of an offence.*

49(3) … it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

50(1) Save in accordance with a licence, a person shall be guilty of an offence if he or she […] offers or exposes for sale, transportation, distribution, introduction, or release—
(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,
(b) anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated, or
(c) a vector material listed in the Third Schedule, in any place in the State specified in the third column of the Third Schedule in relation to such an animal, plant or vector material."

2.2 International Legislation

2.2.1 EU Birds Directive

The Birds Directive constitutes a level of general protection for all wild birds throughout the European Union. Annex I of the Birds Directive includes a total of 194 bird species that are considered rare, vulnerable to habitat changes or in danger of extinction within the European Union. Article 4 establishes that there should be a sustainable management of hunting of listed species, and that any large scale non-selective killing of birds must be outlawed. The Directive requires the designation of Special Protection Areas (SPAs) for: listed and rare species, regularly occurring migratory species and for wetlands which attract large numbers of birds.

There are 25 Annex I species that regularly occur in Ireland and a total of 153 Special Protection Areas have been designated.

2.2.2 EU Habitats Directive

The Habitats Directive aims to protect some 220 habitats and approximately 1000 species throughout Europe. The habitats and species are listed in the Directives annexes, where Annex I covers habitats and Annex II, IV and V cover species. There are 59 Annex I habitats in Ireland and 33 Annex IV species which require strict protection wherever they occur. The Directive requires the designation of Special Areas of Conservation for areas of habitat deemed to be of European interest. The SACs together with the SPAs from the Birds Directive form a network of protected sites called Natura 2000.

2.2.3 Water Framework Directive

The EU Water Framework Directive (WFD) 2000/60/EC is an important piece of environmental legislation which aims to protect and improve water quality. It applies to rivers, lakes, groundwater, estuaries, and coastal waters. The Water Framework Directive was agreed by all individual EU member states in 2000, and its first cycle ran from 2009 – 2015. The Directive runs in 6-year cycles, so the second (current) cycle runs from 2016 – 2021.The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high water quality status where it exists. The WFD requires member states to manage their water resources on an integrated basis to achieve at least 'good' ecological status, through River Basin Management Plans (RBMP), by 2027.

2.2.4 Bern and Bonn Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) was enacted to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was introduced to give protection to migratory species across borders in Europe.

2.2.5 Ramsar Convention

The Ramsar Convention on Wetlands is an intergovernmental treaty signed in Ramsar, Iran, in 1971. The treaty is a commitment for national action and international cooperation for the conservation of wetlands and their resources. In Ireland there are currently 45 Ramsar sites which cover a total area of 66,994 Ha.

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3 DESCRIPTION OF THE PROPOSED RE-ZONING OF LANDS

3.1 Site Location and Overview

The subject site is located south-west of Naas town and North-east of Newbridge along the M7 corridor. The subject site is also located within relative proximity to the Dublin-Cork railway line which services Sallins & Naas as well as Newbridge. Proximity to the M7 provides a direct link to Dublin, Portlaoise, Limerick. The M7 also links with the M8 and M9 which connect Cork, Waterford Carlow, and Kilkenny. There are multiple retail and enterprise parks located along the M7 corridor including Newhall Retail Park, M7 Retail Park.

Naas Enterprise Park currently comprises of over 40.47 ha (100 acres), 100 occupiers and over 139,350 sqm (1.5 million sq. ft) of industrial and office accommodation. This enterprise park is home to many occupiers that include Domino's Pizza, DSV, NCT, National Council for the Blind, HSE and Conlan BMW.

Naas Enterprise Park has recently experienced improved connectivity to the M7 through road enhancements. This is mentioned in supporting documentation from Transport Insights.

3.2 Description

Naas Enterprise Park is in an area zoned under 'Objective NE1: Industry/Warehousing' in the Kildare County Council Development Plan 2017-2023. The purpose of this zone is to provide sites for industrial, and in particular warehousing uses, at locations, which are outside the built-up area of Naas.

Palm Logistics is seeking a rezoning of a portion of these lands (outlined in Figure 1) to allow them fulfil the demand requirements and ensuring that any new development activity occurs in a logical and sequential fashion.

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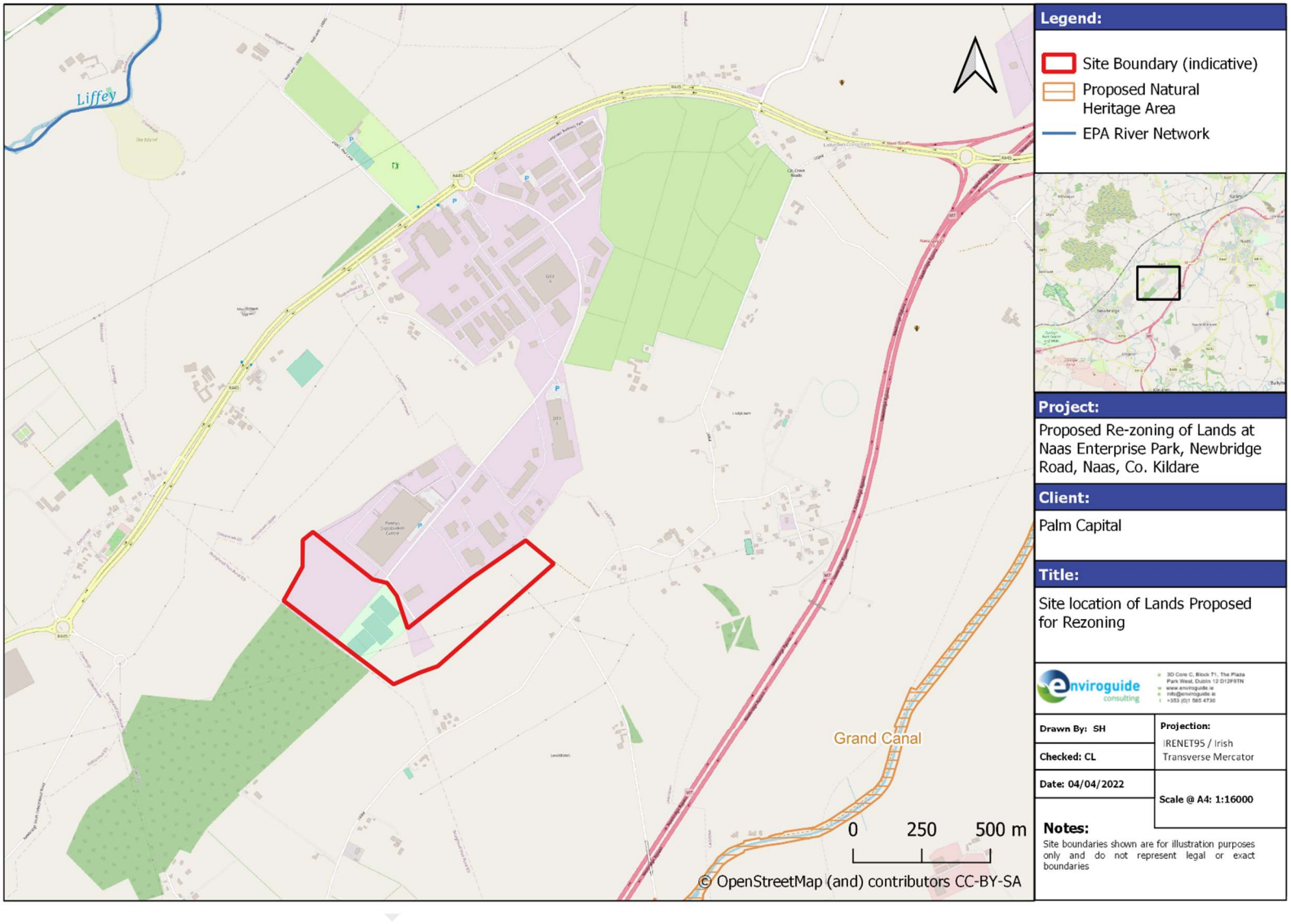

FIGURE 1. SITE LOCATION.

4 METHODOLOGY

This section details the steps and methodology employed to undertake an Ecological Impact Assessment of the Proposed Re-zoning.

4.1 Scope of Assessment

The specific objectives of the study were to:

- Undertake baseline ecological surveys and evaluate the nature conservation importance of the Site of the Proposed Re-zoning;
- Identify and assess the direct, indirect, and cumulative ecological implications or impacts of the Proposed Re-zoning during its lifetime; and
- Where possible, propose mitigation measures to remove or reduce those impacts at the appropriate stage of development.

4.2 Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources pertaining to the Site's natural environment. The desktop study relied on the following sources:

- Information on species records and distributions, obtained from the National Biodiversity Data Centre (NBDC) at *www.maps.biodiversityireland.ie* ;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at *www.gis.epa.ie* ;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at *www.gsi.ie* ;
- Information on the network of designated conservation sites, boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie* ;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland;
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Re-zoning from Kildare County Council;
- Information on the extent, nature and location of the Proposed Re-zoning, provided by the applicant and/or their design team;
- The current conservation status of birds in Ireland taken from Gilbert et al. (2021).
- The pollinator friendly planting code provided by The All-Ireland Pollinator Plan (2015-2020) available at www.pollinators.ie

A comprehensive list of all the specific documents and information sources consulted in the completion of this document is provided in Section 11, References.

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4.3 Field surveys

4.3.1 Habitat Surveys

Habitats surveys were undertaken on the 4th of May 2022. Habitats were categorised according to the Heritage Council's '*A Guide to Habitats in Ireland'* (Fossitt, 2000) to level 3. The habitat mapping exercise had regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2010) published by the Heritage Council. An android mobile device fitted with QField was used to record habitats and images at the Site with accurate location mapping details, and additional images were taken where required due to the extent of biodiversity or area of the habitats. Habitat categories, characteristic plant species, invasive species and other ecological features were recorded.

4.3.2 Rare and Invasive Species Surveys

The Site was assessed for the presence of rare and/or invasive plant species during the habitat surveys undertaken.

4.3.3 Mammal Surveys

Mammal surveys of the Site were carried out in conjunction with the habitat surveys. The Site was examined for tracks and signs of mammals. The habitat types recorded throughout the survey area were used to assist in identifying the fauna considered likely to utilise the area.

4.3.4 Bird surveys

First breeding bird survey was completed on the 4th of May. [Second survey date TBC]

The birds were surveyed by walking a number of transects along the boundaries and natural breaks within the Site (e.g., treelines) to cover the entire area of the lands proposed for re-zoning. Each transect was divided up into four parts (all a similar distance) and the transect was walked with all species noted at each side of the ecologist. Distance brackets were also used, however, due to the lack of suitable habitat outside of the site, the majority of species were recorded inside the site boundary and within 50 meters each side of the surveyor on each transect.

4.3.5 Bat surveys

[Preliminary Bat Assessment date TBC]

4.4 Assessment

The value of the ecological resources, i.e., the habitats and species present or potentially present, was determined using the ecological evaluation guidance given in the National Roads Authority's Ecological Assessment Guidelines (NRA, 2009a), presented in Appendix I. This evaluation scheme, with values ranging from locally important to internationally important, seeks to provide value ratings for habitats and species present that are considered ecological receptors of impacts that may ensue from a proposal. As per the NRA guidelines, impact assessment is only undertaken of Key Ecological Receptors (KERs).

The assessment of the potential impact of the Proposed Re-zoning on the identified KERs was carried out with regard to the criteria outlined in the draft EPA Guideline (EPA, 2017), presented in Appendix II. These guidelines set out a number of parameters such as quality,

magnitude, extent and duration that should be considered when determining which elements of the Proposed Re-zoning could constitute impact or sources of impacts.

4.5 Limitations

An extensive search of available datasets for records of rare and protected species within proximity of the Proposed Re-zoning site has been undertaken as part of this assessment. However, the records from these datasets do not constitute a complete species list. The absence of species from these datasets does not necessarily confirm an absence of species in the area.

Mammal surveys are best carried out during November to March when vegetation has died back. However, the existing conditions during the survey dates in early May allowed for an appropriate evaluation of the potential use of the site by non-volant mammals.

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5 BASELINE ECOLOGICAL CONDITIONS

5.1 Desk Study

5.1.1 General Site Overview

Geology, Hydrology and Hydrogeology

The Site of the Proposed Re-zoning is within the Liffey and Dublin Bay catchment and Liffey_SC_030 sub catchment (EPA, 2021).

The closest WFD recognised waterbody is the Grand Canal, located 1.2 km southeast of the Site. The WFD ecological status of the Grand Canal for the 2013-2018 period was classed as *Good*, but it is projected to be *At Risk* of not achieving its WFD objectives. The River Liffey is located 1.7km northwest of the Site, has a *Good* status and is considered *Not at Risk* of not achieving its WFD objectives.

The area surveyed (as shown in Figure 3) is partly flanked by small freshwater streams on the northwest and southwest boundaries, as well as a wet drainage ditch along the southern half of the southeast boundary.

The Site of the Proposed Development is situated on the Curragh Gravels East (IE_EA_G_017) groundwater body. The aquifer type in the area is a *Regionally Important Aquifer - Karstified (diffuse)* (GSI, 2021). The groundwater rock units underlying the aquifer are classified as *Dinantian Pure Bedded Limestones*. The level of vulnerability to groundwater contamination from human activities is *High* within the Site.

5.1.2 Designated Sites

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites; from these the conservation objectives of the site are derived. The potential for effects on European Sites is considered as part of this EcIA.

Natural Heritage Areas (NHAs) are designations under the Wildlife Acts to protect habitats, species, or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with SAC and/or SPA sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs), they are offered protection in the meantime under planning policy which normally requires that planning authorities give recognition to their ecological value.

Identification of Designated Sites

The methodology used to identify relevant designated sites comprised the following:

- Use of up-to-date GIS spatial datasets for European and nationally designated sites and water catchments – downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie) to identify designated sites which could potentially be affected by the Proposed Re-zoning;
- The catchment data were used to establish or discount potential hydrological connectivity between the Project Boundary and any designated sites.
- All designated sites within the precautionary zone of influence (within 15km of the Proposed Re-zoning Site) were identified and are shown in Figure 2 and listed in Table 1.
- The potential for connectivity with designated sites at distances of greater than 15km from the Proposed Re-zoning was also considered in this initial assessment. In this case, there is no potential connectivity between the Proposed Re-zoning Site and designated sites located at a distance greater than 15km from the Proposed Re-zoning.
- Table 1 provides details of all relevant designated sites as identified in the preceding steps. The potential for pathways between European sites and the Proposed Re-zoning Site was assessed on a case-by-case basis using the Source-Pathway-Receptor framework. Those designated sites where a pathway was identified are highlighted in green. Pathways considered included:
    a. Direct pathways (e.g. proximity (i.e. location within the designated site), water bodies, air (for both air emissions and noise impacts).
    b. Indirect pathways (e.g. disruption to migratory paths, 'Sightlines' where noisy or intrusive activities may result in disturbance to shy species.
- The site synopses and conservation objectives of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this report.

The result of this preliminary screening concluded that there is a total of five SACs, one SPA, one NHA and 15 pNHAs located within the precautionary Zone of Influence (ZOI) of the Proposed Re-zoning Site. The distances to each site listed are taken from the nearest possible point of the Proposed Re-zoning Site boundary to nearest possible point of each European site or (p)NHA.

There is one Ramsar Site within the zone of influence of the Proposed Re-zoning, namely Pollardstown Fen (ID 474).

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TABLE 1. DESIGNATED SITES WITHIN THE ZONE OF INFLUENCE (15KM) OF THE PROPOSED RE-ZONING AND POTENTIAL PATHWAYS BETWEEN THEM. SITES THAT HAVE BEEN SCREENED INTO THIS ECIA FOR FURTHER ASSESSMENT ARE SHADED IN GREEN.

Site Name (Receptor)	Distance to Proposed Re-zoning	Potential Pathway to receptors
Special Areas of Conservation		
Mouds Bog SAC (002331)	3.0 km	None – Significant distance between the Site and these SACs and thus there is no potential for a pathway via the air (both air emissions and noise impacts). No hydrological connectivity.
Pollardstown Fen SAC (000396)	5.4 km	
Ballynafagh Lake SAC (001387)	8.4 km	
Ballynafagh Bog SAC (000391)	10.1 km	
Red Bog, Kildare SAC (000397)	13.3 km	
Special Protection Areas		
Poulaphouca Reservoir SPA (004063)	13.0 km	None – Significant distance between the Site and this SPA and thus there is no potential for a pathway via the air (both air emissions and noise impacts). No hydrological connectivity.
Natural Heritage Areas		
Hodgestown Bog NHA	12.3 km	None- Significant distance between the Site and this NHA and thus there is no potential for a pathway via the air (both air emissions and noise impacts). No hydrological connectivity.
Proposed Natural Heritage Areas		
Grand Canal (002104)	1.2 km	None- Significant distance between the Site and this pNHA and thus there is no potential for a pathway via the air (both air emissions and noise impacts). No hydrological connectivity.
Mouds Bog (000395)	3.0 km	
Liffey At Osberstown (001395)	4.4 km	None – The potential hydrological pathway via the River Liffey is insignificant due to significant distance between the Site and this pNHA. Foul water generated at the Site goes to the Upper Liffey Valley WWTP, which releases its effluent into the Liffey at Osberstown at the downstream boundary of this pNHA.
Liffey Bank Above Athgarvan (001396)	4.9 km	None – Significant distance between the Site and these pNHAs and thus there is no potential for a pathway via the air (both air emissions and noise impacts). No hydrological connectivity to the Site.
Pollardstown Fen (000396)	5.4 km	
Curragh (Kildare) (000392)	5.5 km	
Liffey Valley Meander Belt (000393)	9.6 km	
Ballynafagh Bog (000391)	10.1 km	
Ballynafagh Lake (001387)	11.5 km	

Site Name (Receptor)	Distance to Proposed Re-zoning	Potential Pathway to receptors
Newtown Marshes (001759)	12.7 km	
Poulaphouca Reservoir (000731)	12.8 km	
Red Bog, Kildare (000397)	13.1 km	
Dunlavin Marshes (001772)	13.2 km	
Donadea Wood (001391)	14.4 km	
Kilteel Wood (001394)	14.4 km	

A designated site will only be at risk from likely significant effects where the Source-Pathway-Receptor link exists between the Proposed Re-zoning and the site. No significant S-P-R links were identified between the Site of the Proposed Re-zoning and the designated sites laid out in Table 1.

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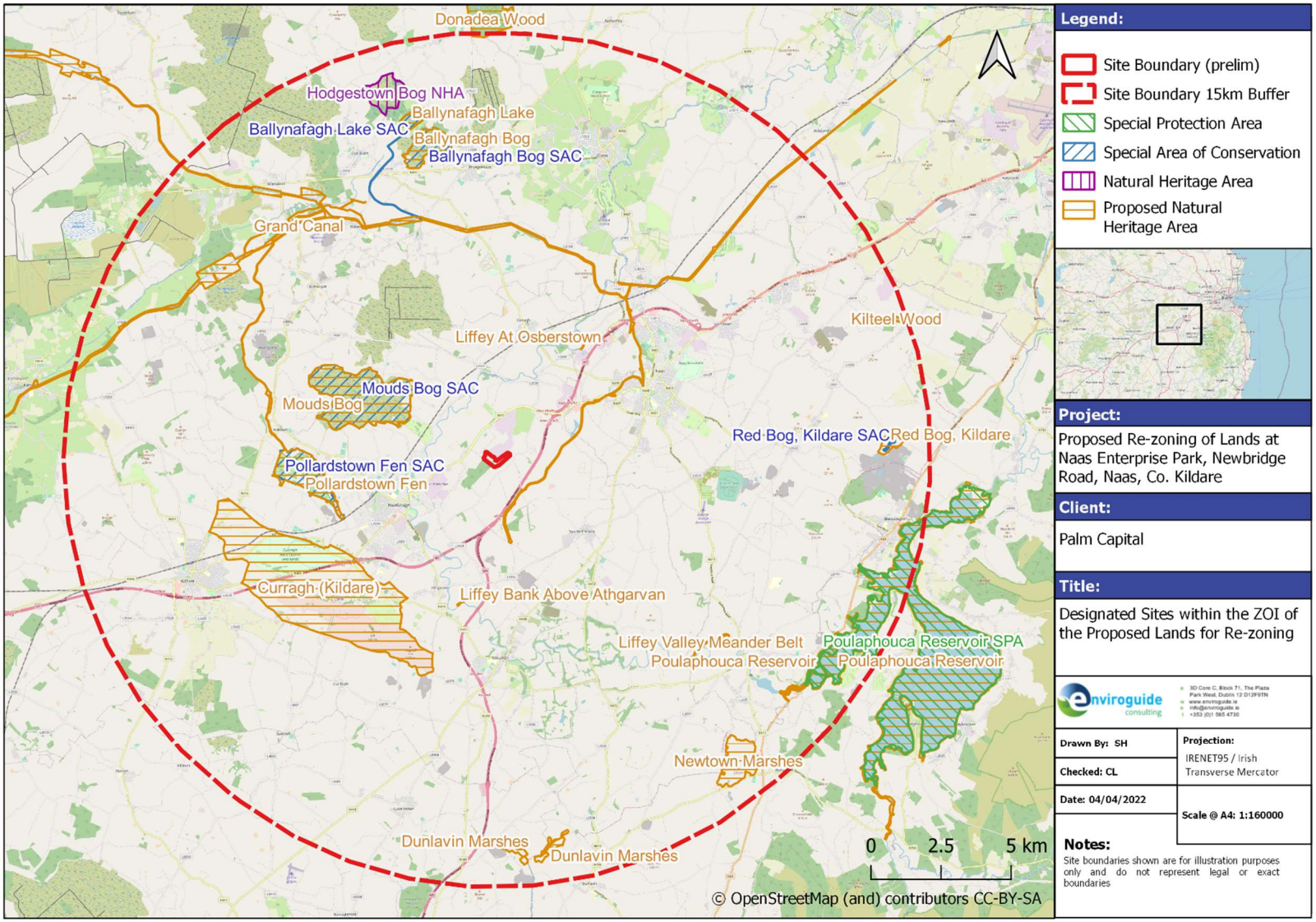

FIGURE 2. DESIGNATED SITES WITHIN 15KM ZOI OF THE PROPOSED RE-ZONING SITE.

5.1.3 Species and Species Groups

The Site of the Proposed Re-zoning is located within the Ordnance Survey Ireland National 2 km grid squares N81I and N81N. Species records from the National Biodiversity Data Centre (NBDC) online database for these grid squares were studied for the presence of rare or protected flora and fauna. The following records were excluded:

- Records greater than 20 years old;
- Species records with no designation or conservation status (excluding mammals and birds).
- Records of species placed on the Waiting List or identified as Least Concern, Data Deficient, Near Threatened or Not Evaluated in national red lists (Lockhart et al., 2012; Wyse Jackson et al., 2016), unless they are listed on the Flora Protection Order

In addition, data from various sources (e.g. Inland Fisheries Ireland, Flora Protection Order Map Viewer) were used to determine the presence of species in the vicinity of the Proposed Development. The following sections outline the results of this assessment. Records from the NBDC are provided in Appendix III.

5.1.3.1 Birds

A total of five bird species have been recorded within the relevant tetrads by the NBDC. Of these, two are listed as *Red,* and three as *Green* in *Birds of Conservation Concern in Ireland 2020-2026* (Gilbert et al., 2021). The two red listed species are the Common Kestrel (*Falco finnunculus*) and the Yellowhammer (*Emberiza citrinella*).

5.1.3.2 Mammals

Records for terrestrial mammals were retrieved from the NBDC online database. Four native terrestrial mammals were recorded within the relevant tetrads, namely:

Eurasian Badger (*Meles meles)*
Hazel Dormouse *(Muscardinus avellanarius)*
Irish Hare *(Lepus timidus* subsp. *hibernicus)*
Red Fox *(Vulpes vulpes)*
West European Hedgehog *(Erinaceus europaeus)*

Apart from the Red Fox and Hazel Dormouse, all of the above species are protected under the Wildlife Act 1976 (as amended). There are no existing records for bats within the tetrads studied.

5.1.3.3 Fish

There are no records for protected or threatened fish species within the relevant tetrads, however eel and salmonids may occur within the River Liffey.

5.1.3.4 Amphibians

There are no records for protected or threatened amphibians within the relevant tetrads, however Smooth Newt (*Lissotriton vulgaris*) has been recorded in the River Liffey during the Newt Survey 2010-2014.

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5.1.3.5 Invertebrates

There are no records for protected or threatened invertebrates within the relevant tetrads.

5.1.3.6 Flora

Rare and Protected Flora

Species records from the NBDC online database and the Flora Protection Order – Bryophytes Map Viewer were studied for the presence of rare or protected flora. No rare or protected flora were recorded within the vicinity, or the tetrad associated with the Proposed Re-zoning.

Invasive Plant Species

Species records from the NBDC online database were studied for the presence of invasive plant species. None were recorded within the vicinity, or the tetrads associated with the Proposed Re-zoning.

5.2 Field Surveys

5.2.1 Habitats & Flora

Due to the size of the Site and variability of habitat types recorded, the Site was split into three general areas (Area 1, Area 2 and Area 3) to simplify the habitat descriptions (Figure 3). All three areas and the habitats they contain evidence of varying levels of artificial influences in their formation. The following sections give details of habitat types and species recorded within the three general areas of the Site.

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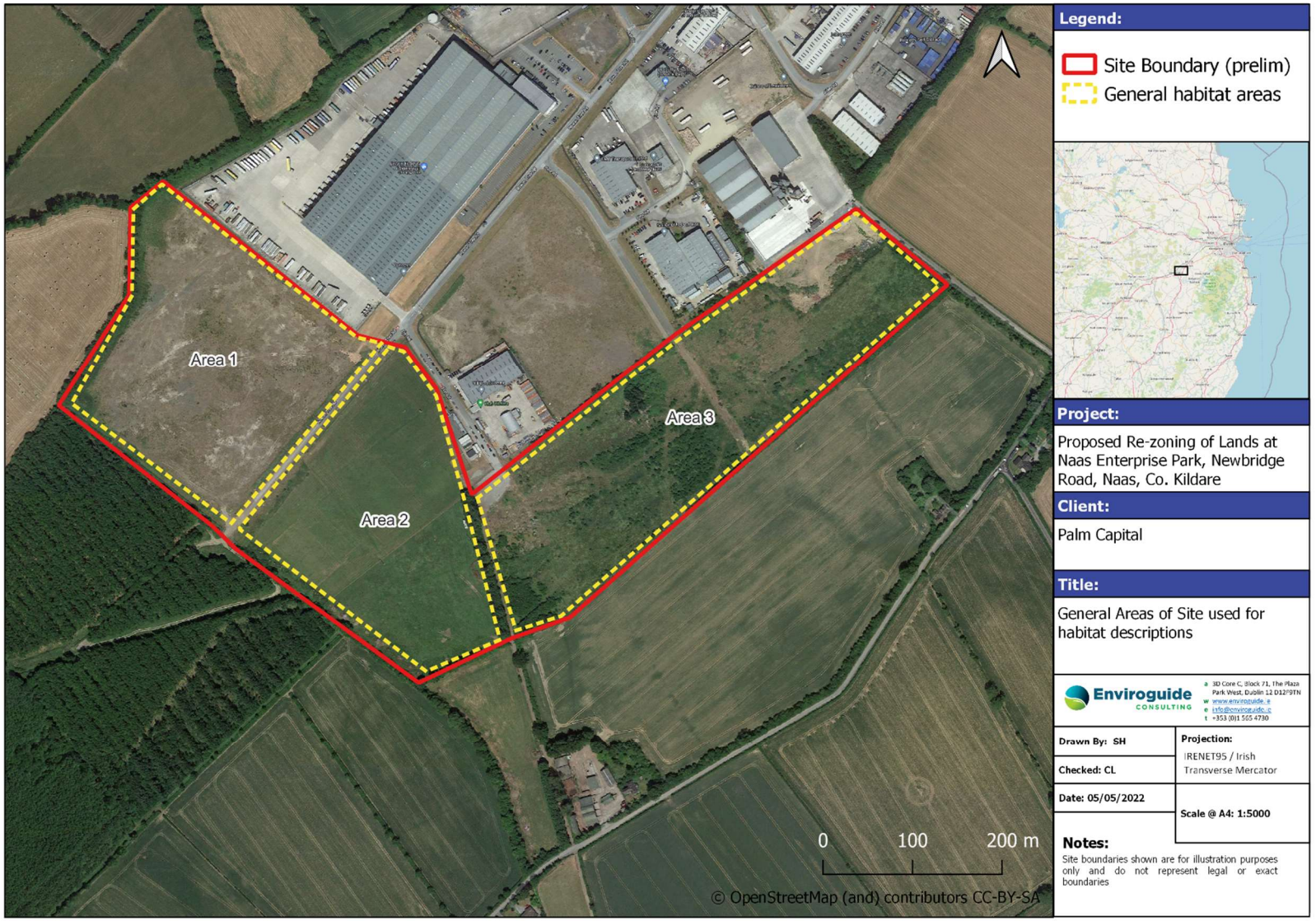

FIGURE 3. GENERAL AREAS OF THE PROPOSED RE-ZONING SITE USED TO SIMPLIFY HABITAT DESCRIPTIONS.

5.2.1.1 Area 1 Habitats – A mosaic of wet grasslands

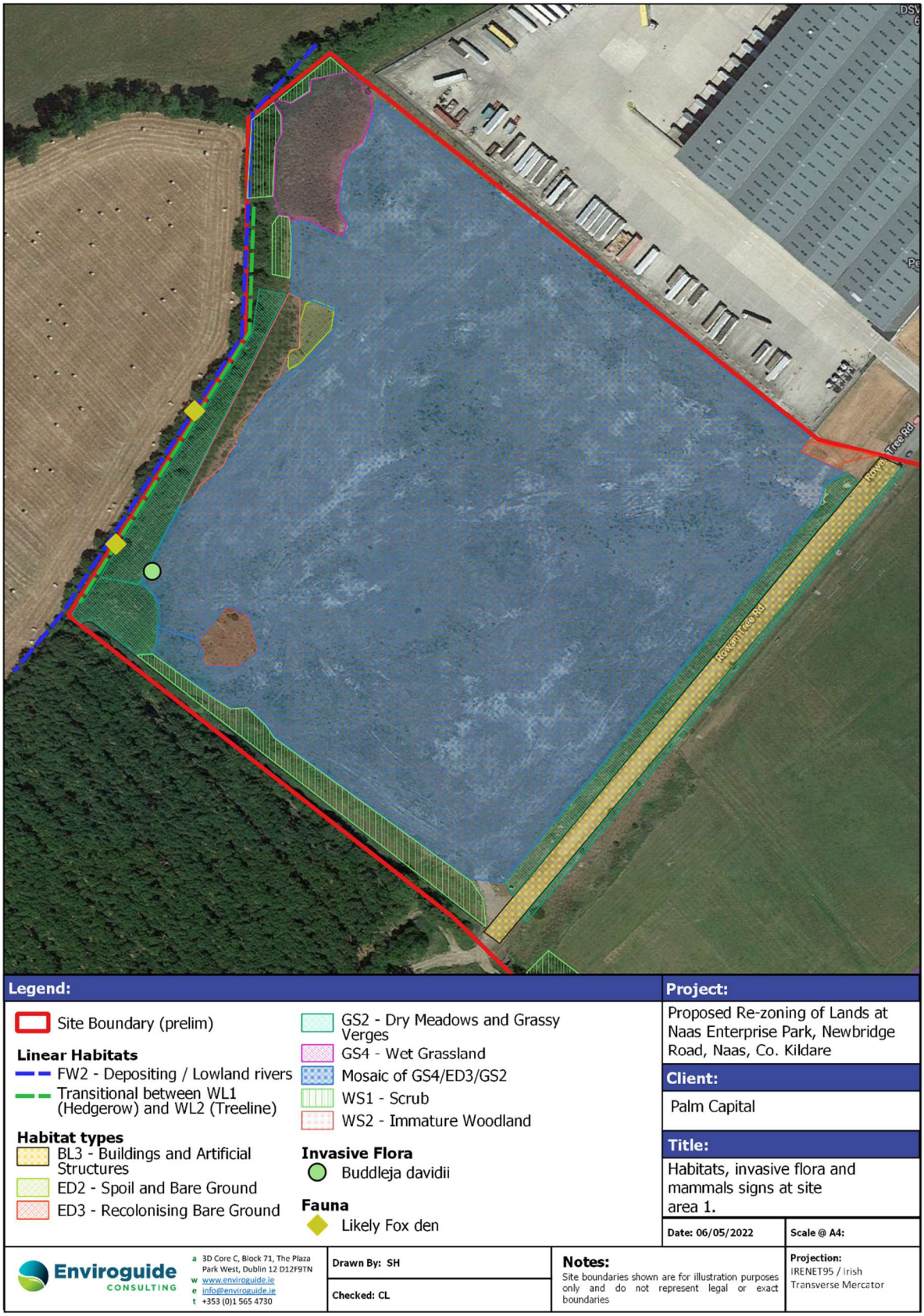

FIGURE 4. HABITAT MAP OF AREA 1 OF THE SUBJECT SITE OF THE PROPOSED RE-ZONING.

Historical satellite imagery of Area 1 obtained using Google Earth Pro shows the area being used to store / dump spoil with tracks of heavy machinery clearly visible. This historical use of the Site is what likely resulted in the mosaic-like habitat of wet and dry grasslands that can be observed today, interspersed with small patches of recolonising bare ground.

This area comprises of the access road into the Site, the grassy verges around it and the lands to the northwest of the road. Within this area, the following habitat types were recorded:

- *ED3 – Recolonising bare ground*
- *GS2 – Dry meadows and grassy verges*
- *GS4 – Wet grassland*
- *WS1 – Scrub*
- *WS2 – Immature woodland*
- *BL3 – Buildings and artificial structures*
- *ED2 – Spoil and bare ground*
- *WL1/WL2 – Transitional habitat between hedgerow and treeline*
- *FW2 – Depositing/lowland river*

Mosaic of ED3, GS2 and GS4

Majority of Area 1 of the Site is formed by a mosaic of three types of habitats: Recolonising bare ground (ED3), Dry meadows and grassy verges (GS2), and Wet grasslands (GS4) (Figure 5). Wet grasslands dominate, while small patches of recolonising bare ground and dry meadow like habitat are also found. Species found in this mosaic include immature Willow (*Salix sp.*), saplings of Downey Birch (*Betula pubescens*) and Alder (*Alnus glutinosa*), Hard rush (*Juncus inflexus*), Soft rush (*Juncus effusus*), Cleavers (*Galium sp.*) Coltsfoot (*Tussilago farfara*), Clover (*Trifolium sp.*), Daisy (*Bellis perennis*), Dock (*Rumex sp.*), Dandelion (*Taraxacum vulgaria*), Meadow Buttercup (*Ranunculus acris*), Creeping Buttercup (*Ranunculus repens*), Sedges (*Carex sp.*), Ribwort Plantain (*Plantago lanciolata*), Silverweed (*Potentilla anserina*), Cuckoo Flower (*Cardamine pratensis*), Willowherb (*Epilobium sp.*), Black Medick (*Medicago lupulina*), Common Groundsel (*Senecio vulgaris*), Meadow Vetchling (*Lathyrus pratensis*), *Geranium sp.* and Cocksfoot grass (*Dactylis glomerata*).

A small area that can be distinctly characterised as wet grassland is found in the northwest corner of Area 1, dominated by Hard and Soft rushes as well as Nettles (*Urtica dioica*).

Similarly, an area forming a distinct habitat of Recolonising Bare Ground is found in the west corner of Area 1, containing Willow, Coltsfoot, Gorse (*Ulex europaeus*), Black Medick, Dandelion, Ribwort Plantain and Rose (*Rosa sp.*).

FIGURE 5. EXAMPLE OF MOSAIC HABITAT FOUND IN AREA 1 OF THE SITE WITH PATCHES OF WET GRASSLAND (TOP) AND DRIER RECOLONISING BARE GROUND (BOTTOM).

Immature woodland (WS2)

This habitat is found at the western side of the mosaic habitat and is formed by a concentration of immature Alder (*Alnus glutinosa*).

Transitional Hedgerow to Treeline (WL1/WL2) and Depositing/Lowland River (FW2)

The northwest boundary is formed by a combination of a hedgerow that is transitioning to a treeline, and a small stream. The hedgerow/treeline is formed by a mix of Elder (*Sambucus nigra*), Willow, Hawthorn (*Crataegus monogyna*), with the understory containing Guelder Rose (*Viburnum opulus*), Herb Robert (*Geranium robertianum*), and Meadow Sweet (*Filipendula ulmaria*). The hedgerow/treeline contains some mature trees with heavy cover of Ivy which may provide potential roosting and resting habitat for bats.

The stream banks contain Creeping Thistle (*Cirsium arvense*) and Cleavers (*Galium sp.*), while Yellow Flag Iris (*Iris pseudacorus*) can be found growing in the stream.

Scrub (WS1)

This habitat is found on the northwest and southwest boundary of Area 1 of the Site, and is dominated by Bramble (*Rubus fructicosus*). It also contains Germander Speedwell (*Veronica chamaedrys*), Horsetail (*Equisetum arvense*), Dandelion and Willowherb.

FIGURE 6. EXAMPLE OF SCRUB AND HEDGEROW/TREELINE HABITATS (TOP) AND THE SMALL STREAM WITH YELLOW FLAG IRIS AT THE NORTHWEST BOUNDARY OF AREA 1 OF THE SITE.

Grassy verges (GS2)

A grassy mound with low diversity of species is found in between the northwest hedgerow/treeline and the immature alder woodland. Additionally, grassy verges border the access road on both sides, containing Dandelion, Gorse, Willow, Cherry Laurel (*Prunus laurocerasus*), Dock, Thistle (*Cirsium sp.*) and Germander Speedwell.

Buildings and artificial structures (BL3)

This habitat comprises the tarmacked access road that follows the edge of the playing fields to the southeast.

Spoil and Bare Ground (ED2) & Recolonising Bare Ground (ED3)

One distinct area of Spoil and Bare Ground is found next to the immature woodland area at the western edge of the mosaic habitat. Additionally, a mound is located at the southwest corner of Area 1 that is possibly an old spoil heap, currently being recolonised by Willow, Gorse, Black Medick, Coltsfoot, Ribwort plantain and Rose.

FIGURE 7. EXAMPLE OF SPOIL AND BARE GROUND BORDERING THE IMMATURE ALDER WOODLAND.

5.2.1.2 Area 2 Habitats – Meadows and Amenity grasslands

Area 2 shows the least amount of change through time in historical satellite imagery and has since 2003 been largely made up of seemingly dry grasslands (both natural and managed) and meadow type habitats. Only parts of the southwest boundary scrub are of evidently artificial origin, with signs of spoil heaps / earth mounds in early 2000s imagery that were gradually covered in growth and developed into what is now classified as scrub habitat.

This area contains the following habitat types:

- *GA2 – Amenity grasslands (Improved)*
- *GA1/GS2 – Transitional grassland between Improved agricultural grassland (GA1) and Dry meadows and grassy verges (GS2)*
- *WS1 – Scrub*
- *WL2 – Treeline*
- *FW2 – Depositing/lowland rivers*
- *FW4 – Drainage ditch*

The majority of Area 2 is taken up by the grassland type habitats, with a highly maintained and fenced off playing field next to the access road making up the western half of the area, and a low biodiversity grassland dominating the eastern half of Area 2.

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FIGURE 8. HABITAT MAP OF AREA 2 OF THE SUBJECT SITE OF THE PROPOSED RE-ZONING. ARROWS INDICATE FLOW DIRECTION OF DRAINAGE DITCH AND SMALL STREAM.

Grassland habitats (GA2, GA1/GS2)

These habitats form the majority of Area 2, with low diversity of grasses and rushes. Species found in the Amenity grasslands (Improved) habitat of the playing fields include Daisy and Clover. The eastern half of Area 2 is mostly made up of Improved agricultural grassland but is in the transitional stage to a dry meadow habitat since it does not seem to be regularly managed. Species found include rushes (Hard and Soft rush) and Dock.

Boundary habitats

There are four distinct habitat types found along the southeast and southwest boundaries. These include the drainage ditch (FW4) that flows into the small stream (FW2) and continues flowing westward. The stream and the ditch are surrounded by treeline habitats (WL2), formed by Willow, Ash (*Fraxinus sp.*), Hawthorn, and Sycamore (*Acer pseudoplatanus*).

Scrub habitat (WS1) is found along the southwest border, between the grasslands and treeline/stream habitats. Species found in this habitat include Nettle, Bramble, Dock and Thistle.

FIGURE 9. EXAMPLE OF AREA 2 HABITATS WITH SCRUB/TREELINE ON THE LEFT OF THE PHOTO, DRY MEADOW/IMPROVED AGRICULTURAL GRASSLAND IN THE FOREGROUND AND AMENITY GRASSLAND IN THE BACKGROUND.

Leylandii dominated treeline

A treeline formed by Leyland Cypress (*Cupressus x* leylandii) and few Poplar (*Populus sp.*) trees creates a natural break between Area 2 and Area 3 of the Site. A dry ditch runs under the treeline, and the habitat was observed supporting some bird activity. A small mammal den, likely rabbit, was also observed.

FIGURE 10. LEYLANDII/POPLAR TREELINE (LEFT) THAT SEPARATES AREA 2 FROM AREA 3 WITH DRY DITCH UNDERNEATH (RIGHT).

5.2.1.3 Area 3 Habitats – Woodlands and grasslands

According to historical imagery, Area 3 was in intensive agricultural (crop) use until the early 2010s, after which it seemingly began to transition to the undulating mosaic of habitats formed by wet and dry grasslands and woodlands that can be observed today. Spoil heaps and bare ground that can be seen in satellite imagery from 2013 are now covered in scrub and recolonising flora, with the area of woodlands gradually increasing through the years.

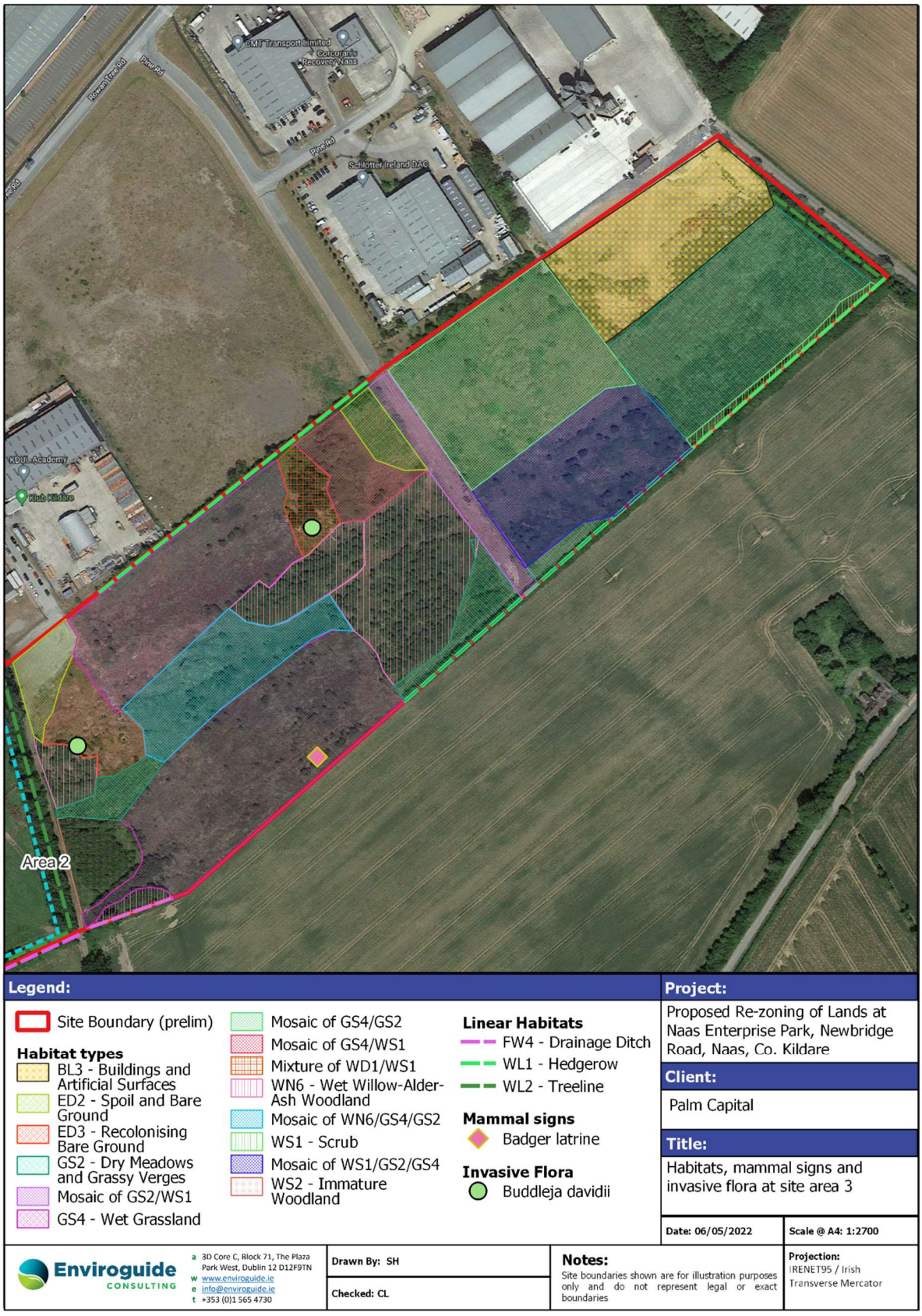

FIGURE 11. HABITAT MAP OF AREA 3 OF THE SUBJECT SITE OF THE PROPOSED RE-ZONING.

Area 3 of the Site is the most diverse in terms of habitat types found on the Site. This is likely due to the historical use of the area, with little to no recent heavy machinery operation, allowing

it to become overgrown and recolonised. This has resulted in an undulating mixture of different types of grassland and woodland habitats. Distinct habitat types recorded in this area include:

- *WS1 – Scrub*
- *WL1 - Hedgerow*
- *WL2 – Treeline*
- *FW4 – Drainage ditch*
- *GS2 – Dry meadows and grassy verges*
- *GS4 – Wet grassland*
- *WN6 – Wet willow-alder-ash woodland*
- *WS2 – Immature woodland*
- *BL3 – Buildings and artificial surfaces*
- *ED2 – Spoil and bare ground*
- *ED3 – Recolonising bare ground*

Grassland habitats and Scrub

Wet grassland habitats are found primarily in the southwest half of Area 3, while the northeast half contains slightly drier grassland habitats varying between a mosaic of dry and wet grassland to a more consistent dry meadow/grassy verge habitat.

Species within the wet grassland habitats of the southwest half of Area 3 include Vetch (*Vicia sativa*), Hard rush, Spear Thistle (*Cirsium vulgare*), Creeping Buttercup (*Ranunculus repens*), Soft rush, Dandelion, Rosebay Willowherb and Dock, as well as Alder and Willow saplings. Also in the southwest area is a strip of a grassy verge (GS2) between the leylandii treeline of Area 2 and the woodland habitats of Area 3. Based on historical satellite imagery this verge has likely formed from an old road, and currently supports Dandelion, Ribwort Plantain, Nettle, Dock and Buttercup. Additionally, a grassy mound extends the meadow/grassy verge habitat in between the woodland habitats, where species such as Nettle, Germander Speedwell, Dandelion, Bramble, Cleavers, Dock and Cocksfoot Grass were found.

FIGURE 12. EXAMPLE OF VARIETY OF HABITAT TYPES FOUND IN SOUTHWEST HALF OF AREA 3 OF THE SUBJECT SITE. INSERT IN BOTTOM LEFT CORNER SHOWS APPROXIMATE FIELD OF VIEW.

The mosaic of dry meadows and wet grassland habitats found in the northeast half of Area 3 contain Hardrush, Willow, Gorse, Dandelion and Cocksfoot grass. Additionally, in the northeast half, an undulating terrain creates a mosaic of the two grassland types with scrub species, such as Gorse, Bramble, Willow, and Hawthorn, as well as Horsetails, Cocksfoot grass, Creeping Buttercup and Willowherb.

Woodland habitats

In the southwest half of Area 3, four distinct wet willow-ash-alder woodland (WN6) habitats are found. Additionally, an immature woodland (WS2) near the leylandii treeline that separates Area 2 from Area 3 can be found. Majority of these woodlands are dominated by Willow.

Boundary habitats

The northwest boundary is lined by a hedgerow, containing Hawthorn, Willow and Ash. Along this hedgerow is concentration of poplars and scrub of bramble, with some invasive Butterfly Bush (*Buddleja davidii*). The southeast boundary is similarly lined by a hedgerow containing Hawthorn and Bramble.

The northeast boundary is lined by a treeline containing a mix of Silver Birch (*Betula pendula*), Oak (*Quercus robur*), Rowan (*Sorbus aucuparia*) and Hornbeam (*Carpinus betulus*).

Artificial Habitats

Spoil and bare ground habitats with a currently low level of biodiversity are found in two small areas along the northwest boundary of Area 3. Recolonising bare ground is found in a small area near the leylandii treeline, where it has likely formed from an old spoil heap. It also contains a small number of puddles with standing water, however these seem to be of a transient nature and did not seem to support any true freshwater species. This habitat currently includes Dandelion, Willow and Germander Speedwell.

In the northeast corner of the Site a new building with a gravel zone surrounding it forms a distinct Buildings and Artificial Surfaces habitat with low biodiversity value.

FIGURE 13. EXAMPLES OF EARLY RECOLONISING BARE GROUND FOUND IN AREA 3 OF THE SUBJECT SITE.

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5.2.2 Mammals (excl. bats)

One mammal species protected under the EU Habitats Directive [92/43/EEC] and Wildlife Act (1976), namely, Irish Hare (*Lepus timidus hibernicus*) was observed crossing Area 1 on arrival to the Site. In addition, the rush dominated grasslands and thick patches of other tall grasses observed across the Site could provide potential habitat for the Irish Hare to breed, as hares give birth to leverets above ground in shallow depressions in dense grass known as 'forms'.

No other protected or rare mammals were directly observed during site surveys. However, an active badger latrine was recorded near the southeast boundary in Area 3, suggesting badger are active in the area. Eurasian Badger (*Meles meles*) is also protected under the EU Habitats Directive [92/43/EEC] and Wildlife Act (1976).

In addition, two dens were recorded along the small stream on the northeast boundary of Area 1, of which one is clearly active and suspected to belong to a Red Fox (*Vulpes vulpes*). Furthermore, all three areas of the Site showed signs of mammal tracks, and the dense scrub, hedgerow and treeline habitats along the boundaries of the Site provide potential habitat for mammals often associated with more urban environments, such as Fox (*Vulpes vulpes*) and Hedgehog (*Erinaceus europaeus*), as well as smaller mammals such as Hazel Dormouse *(Muscardinus avellanarius)* for which records from the area exist in the NBDC database.

FIGURE 14. EXAMPLES OF MAMMAL SIGNS OBSERVED FROM LEFT TO RIGHT: MAMMAL TRACKS THROUGH GRASS AND MEADOW AREAS, ACTIVE DEN (POSSIBLY FOX), BADGER LATRINE.

5.2.3 Bats

[Survey to be completed before end of May 2022]

The treeline habitats along the boundaries to the northwest, southwest and southeast of the Site contain some mature trees with extensive ivy cover that could provide potential resting and roosting habitats for bats.

5.2.4 Birds

The first breeding bird survey on the 4th of May identified a total of 38 species, of which two were definitively confirmed to be breeding on the Site (carrying nesting material and/or food). The rest of the recorded species are likely to be breeding in or near the Site.

Out of the total number of species recorded, three are listed as *Red*, eight as *Amber*, and 27 as *Green* in *Birds of Conservation Concern in Ireland 2020-2026* (BoCCI, Gilbert et al., 2021). Two species recorded have not been assessed in Ireland, namely the Feral Pidgeon and Pheasant. The below table lists all bird species recorded during the Breeding Bird Surveys undertaken on the Site of the Proposed Rezoning.

TABLE 2. BIRD SPECIES RECORDED DURING BREEDING BIRD SURVEYS AT THE SITE OF THE PROPOSED RE-ZONING OF LANDS. [TO BE UPDATED WITH SECOND SURVEY RESULTS]

Species	Scientific name	BoCCI Status	Survey* (1 / 2 / 1&2)	Breeding Activity
Blackbird	*Turdus merula*	Green	1	
Blackcap	*Sylvia atricapilla*	Green	1	
Bullfinch	*Pyrrhula pyrrhula*	Green	1	
Blue Tit	*Cyanistes caeruleus*	Green	1	
Buzzard	*Buteo buteo*	Green	1	
Chaffinch	*Fringilla coelebs*	Green	1	
Chiffchaff	*Phylloscopus collybita*	Green	1	
Dunnock	*Prunella modularis*	Green	1	
Feral Pigeon	*Columba livia f. domestica*	Unclassified	1	
Goldcrest	*Regulus regulus*	Amber	1	
Goldfinch	*Carduelis carduelis*	Green	1	
Greenfinch	*Carduelis chloris*	Amber	1	
Grey Heron	*Ardea cinerea*	Green	1	
Hooded Crow	*Corvus cornix*	Green	1	
House Sparrow	*Passer domesticus*	Amber	1	
Jackdaw	*Corvus monedula*	Green	1	
Kestrel	*Falco tinnunculus*	Red	1	
Lesser Redpoll	*Carduelis cabaret*	Green	1	
Linnet	*Carduelis cannabina*	Amber	1	
Mistle Thrush	*Turdus viscivorus*	Green	1	
Meadow Pipit	*Anthus pratensis*	Red	1	Adult carrying food
Pheasant	*Phasianus colchicus*	Unclassified	1	
Pied Wagtail	*Motacilla alba yarrellii*	Green	1	
Robin	*Erithacus rubecula*	Green	1	
Reed Bunting	*Emberiza schoeniclus*	Green	1	
Raven	*Corvus corax*	Green	1	
Rook	*Corvus frugilegus*	Green	1	
Skylark	*Alauda arvensis*	Amber	1	
Stonechat	*Saxicola torquata*	Green	1	Adult carrying food/nesting material

Starling	*Sturnus vulgaris*	Amber	1	
Swallow	*Hirundo rustica*	Amber	1	
Song Thrush	*Turdus philomelos*	Green	1	
Sedge Warbler	*Acrocephalus schoenobaenus*	Green	1	
Whitethroat	*Curruca communis*	Green	1	
Woodpigeon	*Columba palumbus*	Green	1	
Wren	*Troglodytes troglodytes*	Green	1	
Willow Warbler	*Phylloscopus trochilus*	Amber	1	
Yellowhammer	*Emberiza citrinella*	Red	1	

*) Species recorded during 1st survey only (04/05/2022) = 1, on 2nd survey only (TBC) = 2, or both = 1&2.

5.2.5 Aquatic fauna

A number of ponds and puddles in the wet grassland habitats contained tadpoles (likely of the Common Frog *Rana temporaria*) and two dead frogs were observed near the southwest boundary of Area 1. Additionally, the puddles and ponds contained dragonfly larvae, water beetles, and freshwater molluscs (*Bithynia tentaculata*). No tadpoles or other freshwater fauna were recorded in the wet grassland areas of Area 3.

The small stream on the southwest border of Area 2 was noted to contain typical freshwater invertebrates, such as caddisfly (order *Trichoptera*).

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FIGURE 15. EXAMPLES OF AQUATIC FAUNA OBSERVED IN THE WET MOSAIC HABITAT OF AREA 1. CLOCKWISE FROM TOP LEFT: TADPOLES (LIKELY *RANA TEMPORARIA*), DRAGONFLY LARVAE, FRESHWATER MOLLUSC (*BITHYNIA TENTACULATA*), WATER BEETLE.

5.2.6 Invasive Flora

No invasive species listed on Schedule III of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended) were recorded at the Site. One *High* impact species, Cherry Laurel (*Prunus laurocerasus*) and two *Medium* impact invasive species, namely Sycamore (*Acer pseudoplatanus*) and Butterfly Bush (*Buddleja davidii*) (Kelly et al., 2013) were recorded.

5.3 Designated sites, habitat and species evaluation

Designated fauna which have the potential to utilise habitat within the immediate area of the Proposed Re-zoning, or for which records exist in the wider area, have been evaluated below in Table 3 for their conservation importance. In addition, designated sites and habitats have been evaluated. This evaluation follows the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009b). The rationale behind these evaluations is also provided. The term ‘Key Ecological Receptors’ KERs is used when impacts upon them are likely. Habitats and species are evaluated based on their conservation status, distribution and the estimated population size or importance.

TABLE 3. EVALUATION OF DESIGNATED SITES, HABITATS AND FAUNA ASSOCIATED WITH THE PROPOSED DEVELOPMENT SITE. (PLEASE REFER TO FIGURES 4, 8 AND 11 FOR DETAILED LOCATIONS OF THE DESIGNATED HABITATS)

Designated Sites/Species/Habitats	Evaluation	Key Ecological Receptor (KER)	Rationale
Designated Sites			
SACs & SPAs	International Importance	No	Refer to Table 1 – this will be confirmed by separate Appropriate Assessment Screening of future Proposed Developments
(p)NHAs	National Importance	No	Refer to Table 1
Ramsar Sites	International Importance	No	Pollardstown Fen is not connected to the Site via land, air or hydrological pathways.
Area 1 Habitats (Fig. 4)			
Mosaic of wet and dry grasslands, interspersed with recolonizing bare ground (GS2/GS4/ED3)	Local importance (higher value)	**Yes**	The puddles and larger shallow ponds support a variety of aquatic fauna, including Common Frog, water beetles, dragonflies, and molluscs. Due to the mosaic like organization of the habitats, the three habitat types recorded should be considered as one. As such, they also support a relatively high floral diversity in a local context.
Northwest boundary –Scrub (WS1), hedgerow/treeline (WL1/WL2), grassy verges (GS2), and small stream (FW2)	Local importance (higher value)	**Yes**	The small stream and the habitats immediately adjacent to it (i.e., scrub, treeline and grassy verge habitats) form part of a more continuous ecological corridor connecting the Site to the larger managed forestry area to the south. Evidence of mammals using the corridor for more permanent dens and for commuting.
Immature woodland (WS2)	Local importance (lower value)	No	In their current form, the immature trees are not likely to provide a significant amount of foraging and/or shelter options to birds, bats and/or mammals within the context of the Site. This habitat has a relatively low level of biodiversity in the local context.
Recolonising bare ground (ED3), Spoil and bare ground (ED2)	Local importance (lower value)	No	Small areas that contain low biodiversity. Some evidence of fauna crossing these areas.
Southwest boundary – Scrub (WS1)	Local importance (lower value)	No	May provide some foraging habitat and shelter to small mammals, birds and/or bats.
Access road – Artificial surfaces (BL3) and the surrounding grassy verges (GS2)	Local importance (lower value)	No	Low biodiversity, provides some foraging habitat and shelter to small birds, considered lower value in a local context.
Area 2 Habitats (Fig. 8)			
Amenity grassland (improved) (GA2), Improved agricultural grassland (GA1)	Local importance (lower value)	No	Low biodiversity grasslands, few mammal tracks. Considered lower value in the local context.
Boundary habitats – Small stream (FW2), drainage ditch (FW4), scrub (WS1) and treeline (WL2)	Local importance (higher value)	**Yes**	The freshwater habitats (FW2 and FW4) and the habitats surrounding them (i.e., scrub and treeline habitats) form part of an ecological corridor that connects to the forestry southwest of the Site.
Leylandii cypress and poplar treeline (WL2)	Local importance (higher value)	**Yes**	This prominent and mature treeline provides potential foraging, nesting and roosting habitats for local bird and bat populations, as well as mammals (rabbit/hare den observed). Pair of Kestrel observed displaying along bird survey transect at this treeline.
Area 3 Habitats (Fig. 11)			
Southwest half			
Wet willow-alder-ash woodland (WN6) and Immature woodland (WS2)	Local importance (higher value)	**Yes**	Area relatively large in the local context, likely to provide potential foraging, nesting and roosting habitat for local bird and bat populations.

Designated Sites/Species/Habitats	Evaluation	Key Ecological Receptor (KER)	Rationale
Northwest boundary by KDUL Academy – Hedgerow (WL1)	Local importance (lower value)	No	This habitat may support some bird and bat activity. Does not provide a significant ecological corridor to other habitats.
Mix of broadleaved woodland (WD1) and Scrub (WS1) at northwest boundary	Local importance (lower value)	No	These habitats may support some bird and bat activity. No significant connectivity to other habitats. Supports some invasive Butterfly Bush.
Wet grassland (GS4) (south quadrant of Area 3)	Local importance (higher value)	**Yes**	Evidence of badgers and possibly other mammals being active in this habitat (badger latrine, mammal tracks), supports a variety of floral species.
Wet grassland (GS4) (next to hedgerow by KDUL Academy) and undulating mix of WN6/GS2/GS4 (woodland, dry and wet grasslands)	Local importance (lower value)	No	Some evidence of mammal use of these habitats (tracks). Low biodiversity of species in the local context.
Early recolonising bare ground (ED3) and Spoil and Bare Ground (ED2)	Local importance (lower value)	No	Negligible ecological value, low biodiversity in a local context.
Drainage ditch on southeast border (FW4)	Local importance (higher value)	**Yes**	Adjacent to the active badger latrine, forms a significant portion of the ecological corridor from Area 2 to northeast tip of Area 3. Likely to support mammal activity and commuting.
Northeast half			
Mosaic of Scrub and Dry Meadow (WS1/GS4)	Local importance (lower value)	No	Negligible ecological value, low biodiversity in a local context.
Eastern Boundaries - Hedgerow (WL1), Scrub (WS1) and Treeline (WL2)	Local importance (higher value)	**Yes**	Forms a significant portion of the ecological corridor from the northeast tip of the Site to the forestry in the southwest. Likely to support bird, bat and mammal activity. Several Red listed Yellowhammer observed in northwest corner of Hedgerow/Scrub and Treeline habitats.
Mosaic of Scrub and Wet and Dry Grassland (WS1/GS2/GS4)	Local importance (higher value)	**Yes**	May support some mammal and bird activity. Has low biodiversity and ecological value in the local context, however part of this habitat provides an important buffer between the existing industry and the ecological corridor formed by the hedgerow.
Dry Meadows and Grassy Verges (GS2)	Local importance (lower value)	No	Supports low level of biodiversity, and not considered effective as a buffer zone between existing industry and hedgerow.
Mosaic of Wet and Dry Grassland (GS2/GS4)	Local importance (lower value)	No	May support some mammal movement, but proximity to existing industry and low biodiversity likely to influence any potential activity. Not likely to support significant numbers of birds/bats.
Buildings and Artificial Surfaces (BL3)	Local importance (lower value)	No	Negligible ecological value.
Fauna			
Eurasian Badger *Meles meles*	Local importance (higher value)	**Yes**	Records from area according to the NBDC and an active latrine was recorded during field surveys.
Hazel Dormouse *(Muscardinus avellanarius)*	Local importance (lower value)	No	This species is not considered to be of conservation concern and is not afforded legal protection in Ireland.
Irish Hare *(Lepus timidus subsp. hibernicus)*	Local importance (higher value)	**Yes**	Records from area according to the NBDC, and one individual was recorded crossing the Site on arrival. Grassland habitats within the Site suitable for breeding hares, with less suitable habitats outside the Site.
Red Fox *Vulpes vulpes*	Local importance (lower value)	No	This species is not considered to be of conservation concern and is not afforded legal protection in Ireland.

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Designated Sites/Species/Habitats	Evaluation	Key Ecological Receptor (KER)	Rationale
West European Hedgehog *Erinaceus europaeus*	Local importance (lower value)	No	Records from area according to the NBDC, but no evidence of hedgehog found during field surveys. Any hedgehogs associated with the Site are considered to be of local importance (lower value).
Aquatic Fauna	Local importance (higher value)	**Yes**	A relatively large wetland habitat in Area 1 supports several aquatic species, including frog, water beetles, dragonfly, and freshwater molluscs.
Bat Assemblage	Local importance (higher value)	**Yes** [TBC]	The site is likely to support commuting and foraging bats. Trees within and adjacent to the Site may have bat roosting potential. [Evaluation to be completed upon completion of field surveys]
Bird Assemblage	Local importance (higher value)	**Yes** [TBC]	The desk study and field surveys identified Red, Amber and Green-listed species within and in the vicinity of the Site. Red listed Meadow Pipit was confirmed breeding at the Site. [Evaluation to be completed upon completion of field surveys]

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6 POTENTIAL IMPACTS OF THE PROPOSED RE-ZONING

As per the relevant guidelines, likely effects have been assessed for Key Ecological Receptors only, as listed in Table 3. All impacts are described ***in the absence of mitigation***.

The following were identified as KERs:

Habitats

- Mosaic of wet and dry grasslands and recolonising bare ground in Area 1
- Freshwater streams at the northwest and southwest boundaries
- Leylandii/Poplar treeline separating Area 2 and Area 3
- Wet willow-alder-ash woodlands in Area 3
- Boundary habitats of the Site that form important ecological corridors and their adjacent buffer zones:
    - Northwest boundary of Area 1 formed by hedgerow/treeline, scrub and grassy verges
    - Southeast and southwest boundaries of Area 2 formed by scrub and treelines
    - Southeast boundary of Area 3 formed by a drainage ditch, scrub, hedgerow, and southern wet grassland

Species/Species Groups

- Eurasian Badger (*Meles meles*)
- Irish Hare (*Lepus timidus* subsp. *hibernicus)*
- Aquatic Fauna
- Bat Assemblage
- Bird Assemblage

The potential impact of the Proposed Re-Zoning of Lands on European Sites was assessed as part of this EcIA. No potential significant effects on European Sites are anticipated as a result of the Proposed Re-zoning of Lands due to the absence of potential S-P-R pathways between the Site and any of the European Sites identified within its 15km ZOI (Table 1).

The Proposed Re-zoning of Lands is expected to result in applications for permissions of developments typical of the Industry/Warehousing zoning on the already developed lands adjacent to the Site. Potential sources of impacts were therefore identified based on typical Industry/Warehousing developments in the area, which are expected to include large warehouse style buildings and extensive areas of tarmacked/gravelled roads as well as similarly surfaced yards and/or car parking areas.

Potential sources of impacts from the Proposed Re-Zoning of Lands have been identified as follows [**TBC**]:

- Construction Phase of Future Developments as a result of Re-zoning:
    - Uncontrolled releases of silt, sediments and/or other pollutants to air due to earthworks.
    - Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies.
    - Surface water run-off containing silt, sediments and/or other pollutants into the local groundwater.

- Waste generation during the Construction Phase comprising soils, construction and demolition wastes.
- Increased noise, dust and/or vibrations as a result of construction activity.
- Increased dust and air emissions from construction traffic.
- Increased lighting in the vicinity as a result of construction activity.
- Site clearance and earthworks, including clearance of vegetation and woodland.
- Human disturbance

- Operational Phase of Future Developments as a result of Re-zoning:
  - Surface water drainage from the Site from future developments.
  - Increased lighting in the vicinity emitted from future developments.
  - Increased human presence in the vicinity as a result of the Proposed Re-zoning of Lands.
  - Increased heavy vehicle traffic in the vicinity as a result of future Industry/Warehousing developments
  - Long-term habitat loss/modification

6.1 Construction Phase

6.1.1 Impacts on Habitats

6.1.1.1 Mosaic of Wet and dry grassland with recolonising bare ground (Area 1)

The existing habitat currently supports a variety of freshwater fauna, including frog tadpoles, freshwater molluscs, water beetles and dragonfly larvae. Drier areas dominated by thick rushes and grass are likely to support Irish Hares breeding and foraging in the area. Future development of this area would effectively result in the loss of this mosaic habitat of puddles and grasslands, which constitutes a *negative, permanent, significant* impact at a local scale.

6.1.1.2 Freshwater streams (northwest and southwest boundaries)

These habitats currently form sections of important ecological corridors from the Site to the forestry area south of the Site and support a variety of animal activity from freshwater invertebrates to mammals inhabiting their banks. Potential future Industry/Warehousing developments in the proximity of these freshwater habitats could potentially cause deterioration of water quality via accidental releases of silts, sediments and other pollutants into these habitats, which constitutes a *negative, short-term, moderate* impact at a local scale.

6.1.1.3 Leylandii treeline and wet willow woodlands

The Leylandii cypress treeline separating Area 2 from Area 3 on the Site is formed by mature trees that support some bird activity and provide shelter to small mammals in the dry ditch located below it. Loss of all or parts of this habitat due to future development would constitute a *negative, permanent, moderate* impact at a local scale.

The most ecologically important wet Willow woodlands in Area 3 are located adjacent to the drainage ditch and the boundary habitats, and they may provide foraging and sheltering habitat for mammals, birds and bats. The loss of all or parts of these habitats due to future developments would be assessed as a *negative, permanent, moderate* impact at a local scale.

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Additionally, where some trees within the Leylandii treelines or Willow woodlands were to be retained, there is potential, in the absence of mitigation, for works accidentally being carried out within the root protection area of trees and subsequent impacts on the trees via accidental damage, storage of materials in this habitat and "spilling out" of materials into the root protection area, for example. As such, there is potential for *negative, permanent, moderate* impacts on the trees designated for retention at the Site in the absence of mitigation.

6.1.1.4 Boundary habitats and adjacent buffer zone habitats

The habitats at the northwest, southwest and southeast boundaries formed by scrub, treelines and hedgerows form important ecological corridors for wildlife commuting within and around the Site. During field surveys, evidence was found of these habitats supporting mammals such as badger, red fox and rabbits. Additionally, the treeline and hedgerow habitats are likely to provide feeding/foraging as well as resting and nesting/roosting habitat for birds and bats. Future developments may result in the removal of parts or all of these habitats. Should that be the case, this would constitute a *negative, permanent, significant* impact.

Additionally, where some trees and mature hedgerows within the boundary habitats were to be retained, there is potential, in the absence of mitigation, for works accidentally being carried out within the root protection area of trees and subsequent impacts on the trees via accidental damage, storage of materials in this habitat and "spilling out" of materials into the root protection area, for example. As such, there is potential for *negative, permanent, moderate* impacts on the trees designated for retention at the Site in the absence of mitigation.

6.1.2 Impacts on Fauna

6.1.2.1 Mammals (excl. bats)

Badger

The eastern areas of the Site are potentially important as nesting/resting, foraging and commuting habitat for the Eurasian Badger (*Meles meles*). In the absence of mitigation measures, any future development on Area 3 has the potential for *negative*, *long term* to *permanent*, *moderate* impacts on the local Badger population through the removal of the boundary habitats and their associated buffer zones of open grassland, which provide wildlife corridors and foraging habitat.

Additionally, potential disturbance of badgers due to noise, dust and increased human activity from the Construction of any future development constitutes a *negative, short term, slight* impact at a local scale.

Although no badger setts were directly observed during field surveys, due to lack of suitable habitat outside of the Site in proximity to the active latrine which was recorded within the Site, badger setts are likely to exist near or within the boundary habitats around Area 3 of the Site. Disturbance or destruction of setts during Construction of future developments within the southeast areas of the Site, could lead to permanent abandonment of setts by local badger populations. This constitutes a *negative, long term* to *permanent, moderate* impact at a local scale.

Irish Hare

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The Irish Hare is likely to utilise areas of tall grasses and rushes found across the Site during the breeding season. Hares do not burrow, but instead use shallow ground surface dens that known as 'forms', often in dense growths of rushes and tall grasses. The breeding period for Irish Hare is most intense during the spring (Jan-Aug), but they have been known to continue producing offspring throughout the year if weather remains mild and food is abundant. Future developments on these habitats are likely to lead to the loss of some or all habitats suitable for hares on the Site, as well as cause disturbance from noise and dust generated during Construction works. These impacts to hares are assessed as *negative, long-term, moderate* in the local context.

Additionally, heavy machinery operation on the habitats suitable for breeding 'forms' during the most active breeding season may put leverets at risk. This constitutes a *negative, long term, moderate* risk to the local hare populations.

6.1.2.2 Bats

[This section will be further updated upon completion of a dedicated Bat Assessment]

The site is potentially important as foraging and commuting habitat to bats roosting in the treelines along the boundaries and in the forestry south of the Site. In the absence of mitigation, felling of trees located on the Site creates a risk of potential roost loss in addition to loss of shelter, and may place a bat at risk if it is present within a tree at the time of felling. This constitutes a *negative, long term, moderate* impact on bats at the local scale, with the risk of injury/death assessed as a *negative, long term, significant* impact.

Construction Phase lighting may also disturb bats usual foraging, commuting and roosting, and this impact is assessed as *negative, short-term, moderate.*

6.1.2.3 Birds

[This section will be further updated upon completion of a second breeding bird survey]

Several bird species were recorded during the Breeding Bird Surveys, especially within the vicinity of the boundary habitats found at the Site. These habitats are formed by treelines, hedgerows, scrub and grasslands. Should vegetation be cleared as part of the Construction Phase during the breeding bird season (March 1st to August 31st); there is the potential for nesting birds to be harmed and nests to be destroyed. This would be in contravention of the Wildlife Act 1976 (as amended) which provides protection to breeding bird species and their nests and young. It is important to note that ground nesting bird species were also confirmed breeding on the Site during the Breeding Bird Survey (i.e., Meadow Pipit *Anthus pratensis*). Therefore, in the absence of any mitigation or precaution, this risk represents a potential *negative, long term, significant* impact on breeding birds.

The increased noise and dust levels associated with the Construction Phase of any future development as a result of the Re-Zoning of Lands, may have the potential to cause *negative, short-term, moderate impacts* to local bird populations.

The loss of foraging and nesting habitat associated with the Construction Phase of the Proposed Re-zoning has the potential to cause *negative, permanent, moderate impacts* to local bird populations.

6.2 Operational Phase

6.2.1 Impacts on Habitats

6.2.1.1 Freshwater streams

The design of any future developments planned as a result of the Proposed Re-zoning will include features addressing surface and foul water management during their Operational Phase, taking into account the proximity of these freshwater habitats. However, since this information is not possible to obtain at this stage of the Application, the assessment of potential impacts from Operational surface water discharges on the freshwater streams is undertaken assuming a scenario where no features aimed at limiting the impact on these habitats have been implemented.

In the absence of mitigation and design features limiting surface water run-off (both volume and potential pollutants it may contain) to the small streams, Operational surface water discharges from future Industry/Warehousing developments could transport hydrocarbons, sediments and other pollutants into these freshwater habitats, resulting in the deterioration of water quality. This constitutes a *negative, long-term, moderate* impact at a local scale.

6.2.2 Impacts on Fauna

6.2.2.1 Mammals (excl. bats)

Developments generally require lighting for access and safety and this Re-zoning would see the introduction of street lighting, warehouse lighting, parking/yard areas lighting and a general reduction in the dark areas wherein most nocturnal animal activity occurs.

Increases in Operational lighting may affect how local badgers commute and forage within the Site, which is assessed as a *negative, long term* to *permanent, moderate* impact at a local scale.

6.2.2.2 Bats

As bats most commonly feed along hedgerows and treelines and both trees and hedges provide shelter from wind and visibility to predators, the Re-zoning of Lands to Industry/Warehousing with associated increases in lighting can affect how a bat commutes through a site and feeds within and around the site. This may lead to a bat needing to fly over greater distances to find food and roosts. Impacts to bats from loss of habitat and increases in Operational Phase lighting are therefore assessed as *negative, long term, moderate* in the local context.

6.3 Do nothing impact

If the Proposed Re-zoning and subsequent Industry/Warehouse development was not to go ahead, majority of the lands would likely continue to be left unmanaged (excl. the playing fields in Area 2). The mosaic grassland habitats of Area 1 would likely continue to evolve towards a more established/natural wet grassland habitat as the remaining bare ground is recolonised, and the area would continue to provide habitat for amphibians and other freshwater fauna. The immature woodlands would mature to become more suitable for nesting birds and potentially provide better foraging habitat for bats. Treelines, hedgerows and scrub habitats would similarly continue to mature and likely encroach further into the Site and the grasslands

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within it. Overall, the Site would be expected to evolve towards a more natural, dynamic state, while maintaining some level of heterogeneity in the habitat types occurring due to the mixture of historical uses of the Site (i.e., spoil, heavy machinery operation, agricultural land). However, the naturalisation of the area will remain somewhat limited due to the agricultural and industrial use of lands adjacent to the Site.

7 CUMULATIVE IMPACTS

If the Proposed Re-zoning and existing or proposed projects or plans impact on the same KERs, there is potential to lead to cumulative impacts which could be of a higher level of significance. This applies to potential impacts on bats due to the combined loss of suitable commuting and/or foraging habitat in the locality and potential impacts on birds due to the combined loss of nesting or foraging habitat in the locality.

7.1.1 Existing granted planning permissions

There are several existing planning permissions on record in the area ranging from small-scale extensions and alterations to existing residential properties to some larger-scale developments. The larger-scale development identified within the vicinity of the Proposed Re-zoning are as follows:

Planning Application Reference: 201055

The amalgamation of structures and property at 1b and 1c Willow Drive, Naas Enterprise Park. The proposed development will include a double height, single storey building to link Units 1b and 1c and reconfiguration of space inside both buildings to create a single, operational, production facility including warehouse storage and ancillary office space (with an internal link between the existing ancillary office space in Units 1B and 1C within the link building); a security hut; rising barriers at access points on the site; cycle parking and smoking shelters and ESB substation building to the south of the site; mechanical plant compounds to the west of Unit 1c; new dock levellers; two silo structures to the west of Unit 1c (including the relocated silo currently located to the east of Unit 1b); two sprinkler tanks and pump house to the north of the site; an HGV maintenance and washing area to the north of the site; gas meter building to the south west of the site; reorganization of parking to the front of the building; removal of structures in the rear yard of Unit 1b and ancillary demolition to facilitate the development; new boundary fencing; all proposed signage; all ancillary underground drainage to facilitate the development and all other ancillary works or uses such as revised HGV parking and waste handling areas to the north of the units. **Decision: Conditional. Grant Date: 15/02/2021**

Planning Application Reference: 17177

Proposed new 1344sqm industrial workshop/warehousing building on the existing industrial development site, as well as all associated car parking and infrastructural services. Retention is sought for modifications to the existing building elevations and alterations to the height of the existing building previously granted under planning permission 06/2712. Retention is also sought for: a building on the site comprising of 312sqm used for warehousing/storage space, a prefabricated canteen building (59sqm), ancillary storage containers totalling 235sqm and external mechanical plant installations totalling 15sqm which includes an argon gas pressurised tank with a storage capacity of 2000 litres. Revised by Significant Further Information which consists of modification to the site boundary to the east of the site to include

a hardstanding area to be used for the purpose of providing additional overflow car parking space relating to the existing premises. **Decision: Conditional. Grant Date: 18/08/2017**

Planning Application Reference: 21306

Constructing two new agricultural grain stores, a new agricultural grain drying unit consisting of an intake unit, 2 no agricultural grain bins, an agricultural grain dryer and conveyor belts, a new retaining wall and all associated siteworks. **Decision: Conditional. Grant Date: 04/05/2021.**

Planning Application Reference: 21731

(a) Erection of one and a half storey type house, (b) Garage/fuel store for domestic use, (c) Installation of an Oakstown BAF wastewater treatment plant with polishing filter percolation area and (d) New vehicular recessed entrance and access driveway and all associated site works. Revised by Significant Further Information which consists of revised site location and layout including revised location of entrance and wastewater treatment. **Decision: Conditional. Grant Date: 05/10/2021**

Relevant Policies and Plans

The following policies and plans were reviewed and considered for possible in-combination effects with the Proposed Re-zoning:

- Kildare County Development Plan (CDP) 2017-2023
- Kildare County Development Plan (CDP) 2023-2029 Draft

Both County Development Plans have directly addressed the protection of biodiversity through specific policies and objectives.

8 MITIGATION AND ENHANCEMENT MEASURES

The following mitigation and enhancement measures have been identified to address the predicted negative impacts on the KERs as outlined in section 6 of this EcIA. As the impacts were predicted based on hypothetical future Industry/Warehousing type developments, these mitigation measures are similarly based on the predicted typical Industry/Warehousing type developments that would result from the Proposed Re-zoning of Lands.

8.1 Construction Phase

8.1.1 Mosaic of Wet grassland and associated fauna

This habitat extends over most of the Area 1 of the Site, and full retention of the habitat is unlikely. Therefore, a suite of mitigation measures is proposed here to address the potential negative impacts from future development in Area 1 of the Site.

- A dedicated amphibian survey will be undertaken prior to any future development to accurately assess the significance of this habitat for local amphibian populations
- The optimal breeding season for amphibians runs from March to June; therefore any habitat/vegetation removal will occur outside of these months

- Any construction works will take place during dry weather conditions to minimise construction related disturbance upon amphibians (such as water quality impacts / trampling / disturbance of soil etc.)
- In the event that amphibian translocations are necessary in order to proceed with vegetation clearance at this location, NPWS will be consulted prior to any works commencing in this area

8.1.2 Freshwater streams

The following measures set out below will protect surface waters throughout the Construction Phase of any future development at the Site of the Proposed Re-zoning of Lands:

8.1.2.1 General surface water mitigation measures

- Storm drain inlets which could receive stormwater from the project will be protected throughout the Construction Phase. Inlet protection will be installed before soil-disturbing activities begin.

- Any imported materials will, as much as possible, be placed on site in their proposed location and double handling will be avoided. Where this is not possible designated temporary material storage areas will be used.

- Refuelling of plant during Construction Phase will only be carried out at designated refuelling station locations on site. Each station will be fully equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed before the commencement of works on site.

- Only emergency breakdown maintenance will be carried out on site. Drip trays and spill kits will be available on site to ensure that any spills from vehicles are contained and removed off site.

- All personnel working on site will be trained in pollution incident control response.

- Any other diesel, fuel or hydraulic oils stored on site will be stored in bunded storage tanks- the bunded area will have a volume of at least 110% of the volume of the stored materials as per best practice guidelines (Enterprise Ireland, BPGCS005).

- Portaloos and/or containerised toilets and welfare units will be used to provide facilities for site personnel. All associated waste will be removed from site by a licenced waste disposal contractor.

- Runoff from machine service and concrete mixing areas will not enter the nearby drainage network.

All wastewater generated on-site during the Construction Phase will be stored and disposed of appropriately. Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into the foul/surface water drainage network.

Contaminated soils if encountered will be segregated. If dewatering is required groundwater will be treated prior to discharge and as agreed with the Local Authority.

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8.1.3 Ecological corridors and woodlands

8.1.3.1 Leylandii treeline and Willow woodlands

The Leylandii treeline forms a natural screening between Area 2 and Area 3, and the mature trees provide potential foraging, nesting, and resting habitat for birds, bats and small mammals. A dedicated Arboricultural Assessment of the health of these trees is recommended for any future developments in proximity to this treeline, and should the trees be deemed of good vigour, the retention of this treeline is recommended for its ecological benefits to birds, bats and small mammals.

The willow woodlands of Area 3 are likely to provide foraging, nesting and resting habitat to bird and bat species, as well as shelter and foraging grounds for mammals present on the Site or occupying the adjacent boundary habitats. For these woodlands, retention of strategic sections to maintain connectivity to the ecological corridor of the southeast boundary habitats is recommended where practicable.

8.1.3.2 Boundary Habitats

It is recommended that all boundary habitats surrounding the freshwater streams as well as the ecological corridor along the southeast border of the Site be fully retained, including a buffer zone of 30m between any artificial buildings and/or surfaces (e.g., tarmacked yards). This would allow the ecological corridors that these boundary habitats form to continue to provide their function as commuting, nesting, resting and foraging/feeding habitat to the associated fauna.

Where retention of the boundary habitats is not practicable, development design is encouraged to include a planting plan of appropriate shrub and tree species to mitigate against the negative impacts that the habitat loss would have on the fauna currently relying on the current boundary habitats and ecological corridors.

8.1.3.3 Protection of Trees and Hedgerows destined for retention

Prior to any construction or demolition works on the Site, all trees and hedgerows destined for retention within the Leylandii treeline, wet Willow woodlands or boundary habitats, will be protected by the use of protective barriers and/or ground protection, fit for the purpose of ensuring the successful long term preservation of the trees.

Trees that are destined to be retained must be protected by protective fencing, signage and/or ground protection prior to any materials or machinery being brought on site and prior to any development, demolition or soil stripping takes place. Areas that are designated for new plantings will be similarly protected. Barriers will be fit for the purpose of excluding construction activity. In most cases barriers will consist of a scaffold framework comprising a vertical and horizontal framework, well braced to resist impacts. To ensure the protective barriers are respected, clear concise signage must be affixed to the barrier in an unrestricted easily viewed location. The protective barriers will remain in an undisturbed condition and only removed on completion of all construction activity finished grading and sodding. Any breach of the protective fence will be reported to the consulting arborist.

During the course of construction works the integrity of the fencing must be respected and remain in place at all times. No building materials or soil heaps are to be stored within this area. Should essential works need to take place within the root protection area, the project

arborist must be informed in advance and any necessary mitigation measures are to be put in place. The protective fencing must remain in situ for the duration of the project and must only be removed upon completion of all works. Construction is only to commence once the protective barriers and/or ground protection have been erected.

8.1.4 Terrestrial Fauna

8.1.4.1 Mammals (excl. bats)

Badger

To establish the level of badger activity and whether active badger setts are located within/around the Site, a dedicated badger survey will be undertaken prior to any development. In the event that badgers are encountered, the NPWS will be consulted prior to any works commencing in the area.

Irish Hare

To mitigate the loss of habitat for the Irish Hare on the Site, sections of suitable breeding habitat with abundant rushes and dense vegetation will be identified and retained where practicable. These sections will be strategically located to provide good connectivity to surrounding landscapes with foraging and shelter.

In addition, to prevent harm to hares and leverets during Construction, an inspection of habitats suspected to contain hare 'forms' during the most active breeding season will be undertaken prior to any heavy machinery operation or vegetation removal.

8.1.4.2 Bats

Subject to grant of permission of any future developments, the construction stage lighting plan will be prepared by the main contractor when they are appointed. Every effort will be made to ensure that there will be no night-time construction lighting within or directed into vegetated areas. To ensure there is no light spill into these areas, the following luminaire specifications, taken from latest guidance (BCT, 2018), will be adhered to during the Construction Phase of any future developments at the Lands of the Proposed Re-zoning:

- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights will be carefully considered to minimise light spill. The shortest column height allowed will be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

8.1.4.3 Birds

Vegetation at the Site was previously cleared to avoid the breeding bird season. Should additional vegetation clearance be required for any reason, clearance will be carried out outside the main breeding season, i.e., outside the period of 1st March to 31st August, in compliance with the Wildlife Act 1976 (as amended). Should any vegetation removal be required during this period, this vegetation will be checked for bird or nests by a qualified Ecologist. If encountered, the precise location within the hedgerow/trees and the species of bird present will be recorded. The area will be protected and the NPWS will be consulted prior to any works commencing in this area. The Site manager will be informed of the presence of nesting birds and advised that no works can commence in this area until further notice. Appropriate protection measures will be implemented in consultation with the project ecologist.

8.1.5 Reduction of noise and dust related impacts

Reduction of noise impacts

Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.

Noise generated during the Construction Phase of potential future developments proposed and permitted as a result of the Proposed Re-zoning could cause temporary disturbance to a number of faunal species in the vicinity of the Site of the Proposed Re-zoning. To mitigate this disturbance, the following measures will be implemented during the Construction Phase of any future developments at the Lands of the Proposed Re-zoning:

- Selection of plant with low inherent potential for generating noise.
- Siting of plant as far away from sensitive receptors as permitted by site constraints.
- Avoidance of unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use of alternative reversing alarm systems on plant machinery.
- Where noise originates from resonating body panels and cover plates, additional stiffening ribs or materials will be safely applied where appropriate.
- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Appointing a site representative responsible for matters relating to noise.
- Monitoring typical levels of noise during critical periods and at sensitive locations.

These measures will ensure that any noise disturbance to nesting birds or any other fauna species in the vicinity of the Site of the Proposed Re-zoning will be reduced to a minimum.

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Reduction of dust related impacts

The following general dust control measures will be followed for the duration of the Construction Phase of potential future developments proposed and permitted as a result of the Proposed Re-zoning and will ensure no significant dust related impacts occur to nearby sensitive receptors including local faunal species.

- In situations where the source of dust is within 25m of sensitive receptors screens (permeable or semi-permeable) will be erected.
- Haulage vehicles transporting gravel and other similar materials to site will be covered by a tarpaulin or similar.
- Access and exit of vehicles will be restricted to certain access/exit points.
- Vehicle speed restrictions of 20km/hr will be in place.
- Bowsers will be available during periods of dry weather throughout the construction period.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil thereby reducing the amount of dust.
- Stockpiles will be stored in sheltered areas of the site, covered, and watered regularly or as needed if exposed during dry weather.
- Gravel or appropriate hardstanding will be used at site exit points to remove caked-on dirt from tyre tracks.
- Hard surfaced roads will be wet swept to remove any deposited materials.
- Unsurfaced roads will be restricted to essential traffic only.
- If practical, wheel-washing facilities will be located at all exits from the construction site.
- Dust production as a result of site activity will be minimised by regular cleaning of the site access roads using vacuum road sweepers and washers. Access roads will be cleaned at least 0.5km on either side of the approach roads to the access points.
- Public roads outside the site will be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- The frequency of cleaning will be determined by the site agent and is weather and activity dependent
- The height of stockpiles will be kept to a minimum and slopes will be gentle to avoid windblown soil dust.
- The following will be dampened during dry weather:
    - Unpaved areas subject to traffic and wind
    - Stockpiles
    - Areas where there will be loading and unloading of dust-generating materials

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Under no circumstances will wastewater from equipment, wheel or surface cleaning enter the surface water drainage network.

8.1.6 Timing of vegetation clearance

The following table provides guidance for when vegetation clearance is permissible. Information sources include The Herpetological Society of Ireland, British Hedgehog Preservation Society's *Hedgehogs and Development* and *The Wildlife (Amendment) Act, 2000*.

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TABLE 4. SEASONAL RESTRICTIONS ON VEGETATION REMOVAL. RED BOXES INDICATE PERIODS WHEN CLEARANCE/WORKS ARE NOT PERMISSIBLE.

Ecological Feature	January	February	March	April	May	June	July	August	September	October	November	December
Amphibians	Vegetation /habitat clearance permissible		Amphibian breeding season (**Estimated**) No habitat destruction unless confirmed to be devoid of tadpoles and other signs of amphibians				Vegetation/habitat clearance permissible if devoid of tadpoles and signs of amphibians					
Breeding Birds	Vegetation clearance permissible		Nesting bird season No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of nesting birds by an ecologist.						Vegetation clearance permissible			
Hibernating mammals (namely Hedgehog, excluding bats)	Mammal hibernation season No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.				Vegetation clearance permissible						Mammal hibernation season No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.	
Bats	Tree felling to be avoided unless confirmed to be devoid of bats by an ecologist								Preferred period for tree-felling (late September to November)		Tree felling to be avoided unless confirmed to be devoid of bats by an ecologist	

The preferred period for vegetation clearance is within the months of September and October (

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Table 4). Vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g. Hedgehog). Where this seasonal restriction cannot be observed, a check for active roosts and nests, as well as signs of amphibians, will be carried out immediately prior to any Site clearance by an appropriately qualified ecologist / ornithologist and repeated as required to ensure compliance with legislative requirements.

8.1.7 Invasive Species Management

The removal of invasive species will consider the potential for further spread of the species to surrounding areas, as well as potential for re-generation at the Site. Each future development at the Site of the Proposed Re-zoning will map the presence and extent of invasive species at the development area, as by their nature invasive species can spread rapidly and their extent is likely to have changed from the time this EcIA report was prepared.

However, examples of removal and management options to be included in any future development plans for the invasive species found on the Site during the field surveys undertaken in respect of this EcIA, namely Cherry Laurel, Sycamore and Butterfly Bush, are provided below.

8.1.7.1 Cherry Laurel

Cherry Laurel (*P. laurocerasus*) is considered a high impact invasive species in Ireland. The management and eradication of Cherry Laurel can be challenging, however the extent of this species on the Site was restricted to the border of the playing fields in Area 2, and the current plantings are immature and small in scale. Nevertheless, should their removal be part of future development at the Site, this section outlines the process of removal and management of this invasive species.

Treatment programmes can be divided into 3 main stages: initial removal, control of stems and roots, and follow up. The following is based on Maguire et al (2008) “Best Practice Management Guidelines: Rhododendron *Rhododendron ponticum* and Cherry Laurel *Prunus laurocerasus*”:

- Cut and remove stems by hand or chainsaw, cutting as close to the ground as possible to remove above ground growth.

- Chip or remove the cut material from the area to allow for effective follow-up work and prevent regrowth. Chipped material can provide good weed barrier around ornamental garden areas.

- Flailing has also been effectively used in Ireland to treat young or immature growth. Although not suitable on all sites and locations, especially steeply sloping or wet sites, it is very effective as it breaks up woody stems upon contact.

There are four recommended methods to achieve successful management after the initial cut and removal:

1. Digging the stumps out. The effectiveness of this technique is increased by removing all viable roots. This can be done manually or with a tractor and plough. To avoid regrowth, stumps will be turned upside down and soil will be brushed off roots.

2. Direct stump treatment by painting or spot spraying freshly cut low stumps with a herbicide immediately after being cut. The herbicide concentrations used and timings of applications vary according to which chemical is used. Use of a vegetable dye is recommended to mark treated stumps and all stumps will be targeted. A handheld applicator will help avoid spray drift onto surrounding non-target species. Always read the label and follow the manufacturers guidelines when using herbicides.

3. A variation on the stump treatment method is stem injection, using a 'drill and drop' methodology, whereby, if the main stem is cut and is large enough for a hole to be drilled into it, the hole can be used to facilitate the targeted application of an approved herbicide.

4. Stump regrowth and seedlings can be effectively killed by spraying regrowth with a suitable herbicide. Best practice spraying protocols will be carefully followed. General broadcast spraying is not as effective as stump spot treatment and has the potential to impact on surrounding non-target species. For herbicide treatment to be effective each individual leaf needs be thoroughly wetted with herbicide to kill the plant.

Disposal of material will be undertaken with due caution to prevent accidental spread of the plant.

8.1.7.2 Butterfly Bush

Buddleia (also known as the butterfly bush) is a member of the *Buddlejaceae* family. It is very fast growing and can reach 2m in its first year, producing flowers and setting seed. It colonises bare ground very rapidly and can quickly form mono-typic stands. As buddleia is a plant that favours disturbed sites, physical grubbing of plants can provide ideal conditions for the germination of seeds. Care needs to be taken to ensure revegetation of controlled areas is undertaken swiftly. The branches of buddleia are capable of rooting as cuttings, so care will be taken to ensure material is disposed of in a manner to avoid this risk.

Given the relatively small scale of the Buddleia infestation at the Site (few isolated bushes), physical control is considered feasible in this instance. After uprooting, it is essential to plant the ground in order to prevent a flush of new seedling growth.

8.1.7.3 Sycamore

In an urban context, the Sycamore *A. pseudoplatanus* can cause harm to buildings because of its invasive root-system, which can penetrate walls and disturb drainage. Once established, the seedlings can be physically difficult to uproot if not tackled when the plant is very young. However, at the Site of the Proposed Re-zoning, sycamore trees were restricted to the well-established boundary habitats, and therefore are not considered to pose a risk to any future development at the Site. Any seedlings observed near new buildings and/or surfaced yards/parking areas will be promptly removed to avoid future damage to the structures.

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8.2 Operational Phase

8.2.1 Mitigation by design

8.2.1.1 Amphibians and other wetland fauna

In order to mitigate against the loss of the mosaic of wet and dry grassland habitats in Area 1 that currently supports a variety of freshwater fauna (incl. frog, dragonfly, molluscs), future developments within Area 1 of the Site are strongly encouraged to incorporate a water/biodiversity feature suitable for amphibians in their designs.

These designs will consider the specific requirements of the amphibians recorded in the pre-development amphibian survey(s), as well as the potential for overall biodiversity enhancement by, for example, promoting pollinators via pollinator friendly planting schemes.

8.2.1.2 Wildlife friendly lighting

The following measures will reduce the impact of Operational Phase light disturbance on local bat and badger populations.

Lighting will be controlled to avoid light pollution of green areas and will be targeted to areas of human activity and for priority security areas. Motion-activated sensor lighting is preferable to reduce light pollution. To retain dark areas for foraging activities of both badgers and bats, the boundary habitats and their buffer zones (if retained), as well as any new plantings of semi-mature to mature trees will not be illuminated.

The following will be undertaken to protect bats:

- Dark corridor for movement of bats along the grounds of the site. Lighting will be directed downwards away from treetops and will not illuminate the boundary habitats.
- All luminaires will lack UV elements when manufactured and will be LED
- A warm white spectrum (ideally <2700 Kelvin) to reduce blue light component
- Luminaires will feature peak wavelengths higher than 550 nm
- Tree crowns will remain unilluminated
- Planting will provide areas of darkness suitable for bats to feed and commute.

To provide future roosting opportunities for bats at the Site, a variety of bat boxes will be installed. A bat specialist will confirm the number and correct locations for these boxes.

9 RESIDUAL IMPACTS

Residual impacts are impacts that remain once mitigation has been implemented or impacts that cannot be mitigated. Table 5 provides a summary of the impact assessment for the identified Key Ecological Resources (KERs) and details the nature of the impacts identified, mitigation proposed and the classification of any residual impacts.

It should be noted that the impacts below are a worst-case scenario based on the pre-application documentation, and as the additional surveys become available and the detailed design progresses, it is envisaged that the level of impact can be reduced. However, it is noted that at present no significant adverse ecological impacts are anticipated as a result of the proposed development of the subject site.

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TABLE 5. SUMMARY OF POTENTIAL IMPACTS ON KER(S), MITIGATION PROPOSED AND RESIDUAL IMPACTS.

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation for Future Developments	Residual Impact
			Quality	Scale	Duration	Significance		
Mosaic of wet and dry grasslands, interspersed with recolonising bare ground **Associated Freshwater fauna**	Local importance (higher value)	Loss of habitat through potential future Industry/Warehousing development	Negative	Local	Permanent	Significant	Incorporation of a water/biodiversity feature suitable for amphibians. Amphibian survey to be undertaken prior to any development on this habitat to inform accurate mitigation. No destruction of habitat to take place during amphibian breeding season (Mar-Jun) and construction to take place during dry weather.	***Slight, long-term, negative* impact at *local* scale**
Freshwater streams (northwest and southeast boundaries)	Local importance (higher value)	Water quality deterioration from Construction Phase run-off. Water quality deterioration from Operational run-off	Negative Negative	Local	Short term Long term	Moderate	Mitigation measures (as outlined in section 8.1.2.1) to protect surface waters to be clearly defined in Construction Plan of each future development. Appropriate design of Operational Phase surface and foul water services, implementing protection measures to preserve the integrity of these streams.	**Negligible**
Leylandii treeline	Local importance (higher value)	Loss of habitat through potential future	Negative	Local	Permanent	Moderate	Retention of all or sections of habitat where practicable.	***Slight, long term, negative* impact at *local scale***

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Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation for Future Developments	Residual Impact
			Quality	Scale	Duration	Significance		
Wet willow-alder-ash woodlands		Industry/Warehousing development Trampling and damage of trees destined for retention during Construction Phase					Tree protections measures during Construction.	
Boundary habitats and adjacent buffer zones	Local importance (higher value)	Loss of habitat through potential future Industry/Warehousing development Trampling and damage of trees destined for retention during Construction Phase	Negative Negative	Local Local	Permanent Permanent	Significant Moderate	Retention of boundary habitats with a minimum 30m buffer zone between hedgerow/treeline and any future development. Tree protection measures during Construction.	**Negligible**
Eurasian Badger (*Meles meles*)	Local importance (higher value)	Disturbance due to noise and dust generated during Construction Phase. Loss of sections of potential foraging and commuting habitat. Permanent abandonment of potential setts in the area due to Construction-related disturbance. Disturbance of foraging routes/habitat due to increased Operational lighting.	Negative Negative	Local Local	Short term Long term - Permanent	Slight Moderate	A dedicated badger survey to be undertaken prior to any development. In the event of active badger setts found on the Site, mitigation measures to be implemented by future developments as outlined in section 8.1.4.1 Wildlife friendly lighting measures to be implemented as identified in section 8.2.2	***Slight, long term, negative* impact at *local scale***

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Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation for Future Developments	Residual Impact
			Quality	Scale	Duration	Significance		
Irish Hare (*Lepus timidus hibernicus*)	Local importance (higher value)	Disturbance due to noise and dust generated during Construction Phase. Loss of sections of potential foraging, breeding and commuting habitat. Potential for injury and mortality during Construction works	Negative	Local	Short term Long term	Slight Moderate	Retention of strategic sections of suitable breeding habitat. Inspection of habitats prior to any Construction works (e.g., heavy machine operation or vegetation removal)	**Negligible**
Bat assemblage	Local Importance (higher value)	Disturbance/removal of foraging routes/habitat due to Construction Phase lighting at the Site. Potential for injury and/or death from tree felling. Loss of sections or all of potential roosting, feeding and commuting habitat within Site. Disturbance/removal of foraging routes/habitat due to Operational Phase increases lighting.	Negative Negative	Local Local	Short term Long term	Moderate Significant Moderate	Bat sensitive lighting measures for Construction Phase (section 8.1.4.2) and Operational Phase (section 8.2.2). Any tree felling to take place between late September and November unless fully checked in advance by a bat specialist. Retention of boundary habitats (where practicable) in future development plans.	***Slight, long term negative* impact at *local* scale.**
Breeding-Bird assemblage	Local Importance (higher value)	Mortality during construction Phase. Loss of potential foraging and nesting habitat.	Negative	Local	Long term	Significant	No removal or trampling of vegetation to be carried out during nesting season.	

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Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation for Future Developments	Residual Impact
			Quality	Scale	Duration	Significance		
		Disturbance due to noise generated during Construction Phase.	Negative Negative	Local Local	Short term Short term	Moderate Significant	Retention of boundary habitats with sufficient buffer zones where practicable. Planting of shrub and tree species to take place as part of project design. Construction related noise control/minimisation measures to be implemented.	***Slight, long-term negative* impact at *local* scale.**
Table to be updated as and when field surveys are completed								

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10 CONCLUSION

It is acknowledged that this EcIA is not informed by detailed information on specific development projects that would result from the Proposed Re-zoning of Lands at Naas Enterprise Park, Newbridge Road, Co. Kildare. Therefore, all impact assessments and suggested mitigation and enhancement measures were informed by typical Industry / Warehousing type developments already existing in the Park.

The Site contains a variety of different habitat types, which have evolved into a mosaic of habitats as a result of historical human caused disturbances, followed by a period of little to no disturbance. Due to the dynamic nature of these habitats, and subject to a favourable outcome of this application for the Proposed Re-zoning of Lands, all future development applications at the Site are recommended to provide up-to-date ecological assessments for the KERs as identified in this EcIA prior to lodgement. These include dedicated surveys on fauna (i.e., breeding birds, bats, amphibians, badgers) as well as an Arboricultural Assessment of trees destined for retention to confirm their vigour.

Finally, the mitigation and enhancement measures as identified in this EcIA will provide a good resource for early planning of future developments, however it is important to note that they were informed by the current ecological state of the Site, and therefore may be out of date by the planning and application stages of future developments at the Site.

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APPENDIX I – VALUE OF ECOLOGICAL RESOURCES

The criteria outlined in the table below, taken from the Guidelines for *Assessment of Ecological Impacts of National Road Schemes* published by the NRA, were used for assigning value to designated sites, habitats and species within the Site of the Proposed Development and surrounding area.

Importance	Criteria

International Importance	- 'European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation.
	- Proposed Special Protection Area (pSPA).
	- Site that fulfills the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended).
	- Features essential to maintaining the coherence of the Natura 2000 Network.
	- Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive.
	- Resident or regularly occurring populations (assessed to be important at the national level) of the following:
	  - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or
	  - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.
	- Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971).
	- World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972).
	- Biosphere Reserve (UNESCO Man & The Biosphere Programme).
	- Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979).
	- Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979).
	- Biogenetic Reserve under the Council of Europe.
	- European Diploma Site under the Council of Europe.
	- Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).

National Importance	- Site designated or proposed as a Natural Heritage Area (NHA).
	- Statutory Nature Reserve.
	- Refuge for Fauna and Flora protected under the Wildlife Acts.
	- National Park.
	- Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park.
	- Resident or regularly occurring populations (assessed to be important at the national level) of the following:
	  - Species protected under the Wildlife Acts; and/or
	  - Species listed on the relevant Red Data list.
	- Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.

County Importance	- Area of Special Amenity. - Area subject to a Tree Preservation Order.

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	- Area of High Amenity, or equivalent, designated under the County Development Plan.
	- Resident or regularly occurring populations (assessed to be important at the County level) of the following:
	  - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
	  - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
	  - Species protected under the Wildlife Acts; and/or
	  - Species listed on the relevant Red Data list.
	- Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.
	- County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP (Biodiversity Action Plan), if this has been prepared.
	- Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.
	- Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.

Local Importance (Higher Value)	- Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared;
	- Resident or regularly occurring populations (assessed to be important at the Local level) of the following:
	  - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
	  - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
	  - Species protected under the Wildlife Acts; and/or
	  - Species listed on the relevant Red Data list.
	- Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;
	- Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.

Local Importance (Lower Value)	- Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; - Sites or features containing non-native species that are of some importance in maintaining habitat links.

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APPENDIX II – EPA IMPACT ASSESSMENT CRITERIA

Criteria used to define quality of effects.

In line with the draft EPA Guidelines (EPA, 2017), the following terms are defined when quantifying the quality of effects:

Quality	Definition
Positive Effects	A change which improves the quality of the environment (for example by increasing species diversity; or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative/adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property by causing nuisance).

Criteria used to define significance of effects.

In line with the draft EPA Guidelines (EPA, 2017), the following terms are defined when quantifying significance of impacts:

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect which alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.

Criteria used to define duration of effects.

In line with the draft EPA Guidelines (EPA, 2017), the following terms are defined when quantifying duration and frequency of effects:

Quality of Effects	Definition
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting less than a year
Short-term	Effects lasting one to seven years
Medium term	Effects lasting seven to fifteen years

Long-term	Effects lasting fifteen to sixty years
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration.

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APPENDIX III – NBDC RECORDS OF INVASIVE PLANTS & RARE OR PROTECTED SPECIES

Species Group	Name	Grid square	Date of last record	Database	Legal Status	Cons status	BoCCI Status
Native Flora	Cornflower (Centaurea cyanus)	N81I	23/10/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	-	EX	-
Birds	Common Buzzard (Buteo buteo)	N81N	30/11/2020	Birds of Ireland	WA	-	Green
	Common Cuckoo (Cuculus canorus)	N81I	03/06/2016	Birds of Ireland	WA	-	Green
	Common Kestrel (Falco tinnunculus)	N81N	23/02/2016	Birds of Ireland	WA	-	Red
	Little Grebe (Tachybaptus ruficollis)	N81N	22/01/2017	Birds of Ireland	WA	-	Green
	Yellowhammer (Emberiza citrinella)	N81I	01/08/2019	Birds of Ireland	WA	-	Red
Terrestrial Mammals	Eurasian Badger (Meles meles)	N81I, N81N	03/02/2017, 31/12/2015	Badger Setts of Ireland Database, Mammals of Ireland 2016-2025	WA	LC	
	Hazel Dormouse (Muscardinus avellanarius)	N81I	25/11/2019	Mammals of Ireland 2016-2025	-	NA	
	Irish Hare (Lepus timidus subsp. hibernicus)	N81I	26/04/2016	Mammals of Ireland 2016-2025	WA	LC	
	Red Fox (Vulpes vulpes)	N81I	16/11/2017	Mammals of Ireland 2016-2025	-	LC	
	West European Hedgehog (Erinaceus europaeus)	N81I, N81N	22/10/2017, 13/06/2021	Mammals of Ireland 2016-2025, Hedgehogs of Ireland	WA	LC	

*Codes used in the 'legal status' column are as follows: HD – species that are protected under Annexes II, IV or V of the EC Habitats Directive 1992; BD – species that are listed on the EC Birds Directive; WA - species that are protected under the Wildlife Act 1976 (as amended); OSPAR – species listed by OSPAR as threatened and/or declining; FPO – species listed on the Flora Protection Order 2015, which receive protection under the Wildlife Act 1976 (as amended); FA – species protected by the Fisheries Acts 1959 to 2006

** Codes in the 'conservation status' column refer to national red lists, using the following supplementary categories: RE (regionally extinct), CR (critically endangered), EN (endangered), VU (vulnerable), NT (near-threatened), lc (least concern), dd (data deficient) or N.A. (not assessed).

*** With the exception of terrestrial mammals, species with "near-threatened", "least concern", "data deficient" and "not assessed" conservation status are not listed. The conservation status of non-native flora and fauna is not listed.

**** BoCCI status is based on Gilbert et al. (2021). Birds of Conservation Concern in Ireland 4: 2020–2026. Only amber and red-listed species are shown.